Two VPNs in one Our Clear Choice Test assesses Nortel's new SSL blade for its Contivity IPSec boxes. **PAGE 12.**

Checking IDs Computer Associates boosts its identity management portfolio with Netegrity buyout. **PAGE 14.**

NetworkWorld

The leader in network knowledge ■ www.nwfusion.com

October 11, 2004 ■ Volume 21, Number 41

A Wider Net

What's your name again?

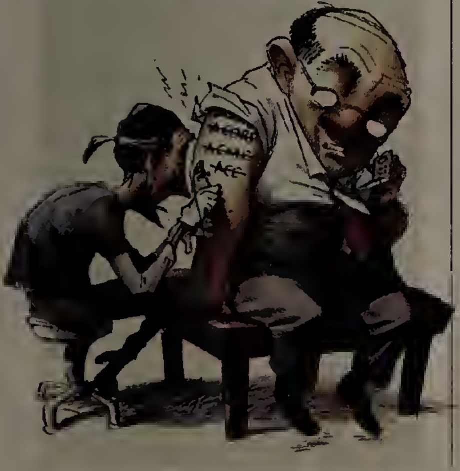
Company name changes full of challenges; good night, White Pajama.

■ BY BOB BROWN

The name GRIC just had to go.

"One of our enterprise partners said at a national sales conference in front of 500 people that the name reminded him of a Slavic warlord," says Rob Fuggetta, who earlier this year led an effort at the remote-access service company to change its name to GoRemote. "Our name might have been memorable, but it wasn't appealing."

See Names, page 61



DAN VASCONCELLOS

CHUCK PLACE

"Town meeting" panelists included, left to right, conference co-producer Geoffrey Moore, attorney Jeffrey Blumenfeld, Keynote CEO Umang Gupta, venture capitalist Mitchell Kertzman and *Fortune* columnist David Kirkpatrick.

Kerry crowd drowns out Bush backers at IT show

■ BY PAUL MCNAMARA

SANTA BARBARA — If President Bush needs broad backing from technology thought-leaders to win re-election Nov. 2, he'll have to change a lot of minds that today are convinced his administration has been bad for the IT industry.

That's the somewhat surprising conclusion drawn from listening to a diverse assemblage of entrepreneurs, analysts, venture capitalists, academics and IT executives at last week's Vortex 2004, a *Network World* event that annually draws the industry's elite.

While corner-office Bush backers such as John Chambers and Michael Dell were not on hand, the president did have supporters to be sure — one called Kerry a socialist. But such voices were in a distinct minority and comparatively subdued. It's also true that few in attendance were gushing about Kerry. Rather, the predominant sentiment over this

See Vortex, page 10

IBM supersizes storage arrays

■ BY DENI CONNOR

IBM this week is expected to debut its highest-capacity storage arrays, although the products' real differentiator is a mix of management technologies designed to help customers get a better handle on where to store growing volumes of data.

Sources say IBM will introduce its TotalStorage DS6000 and DS8000 this week in New York, pitting them against high-end offerings from competitors such as EMC and Hitachi. The TotalStorage boxes, which IBM declined to discuss, are said to borrow technologies from the company's servers and Tivoli management products to support advanced storage capabilities such as virtualization across different vendors' platforms.

With 192T bytes of maximum capacity, the DS8000 boasts more than triple the capacity of IBM's previous high-end offering, the Enterprise Storage Server Model 2105. It also surpasses EMC's Symmetrix DMX, which maxes out at 173T bytes, but has some catching up to do with Hitachi's TagmaStore, which tops out at 332T bytes. IBM's DS6000 will hold 67T bytes, sources say.

■ **Disk storage products on tap from StorageTek. Page 10.**

But sources also say IBM has designed its new arrays with more than capacity in mind. They say the boxes are well designed

See IBM, page 14

Technology INSIDER Storage: ILM

MasterCard International's Jim Hull is awaiting new tools slated to ship next year that will let him begin implementing information lifecycle management. ILM, a long-term strategy that involves classifying and treating data based on its business value, is taking the storage world by storm.

If you're looking for an out-of-the-box information lifecycle management offering you're out of luck. But it's not too early to begin planning. **PAGE 44**

The Fred Hutchinson Cancer Research Center in Seattle is saving $100,000 as part of its three-tier ILM strategy. **PAGE 48**

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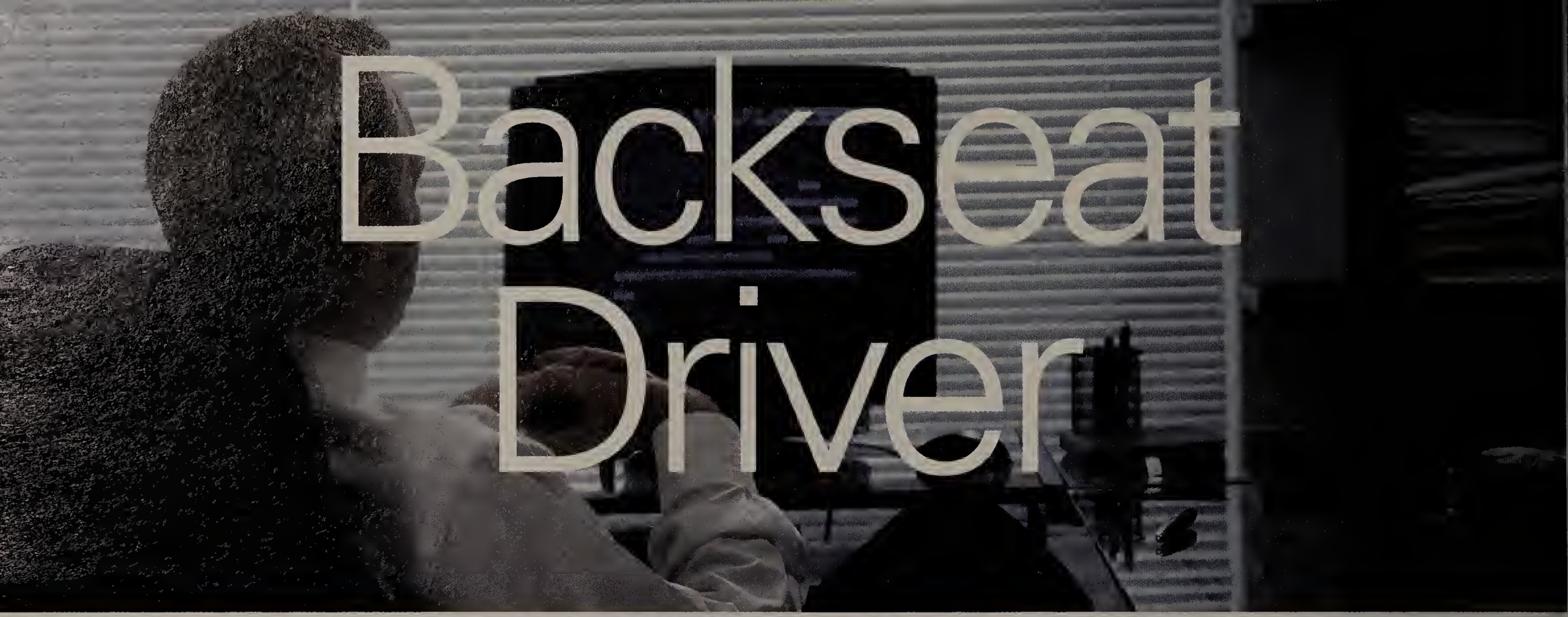

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NetworkWorld

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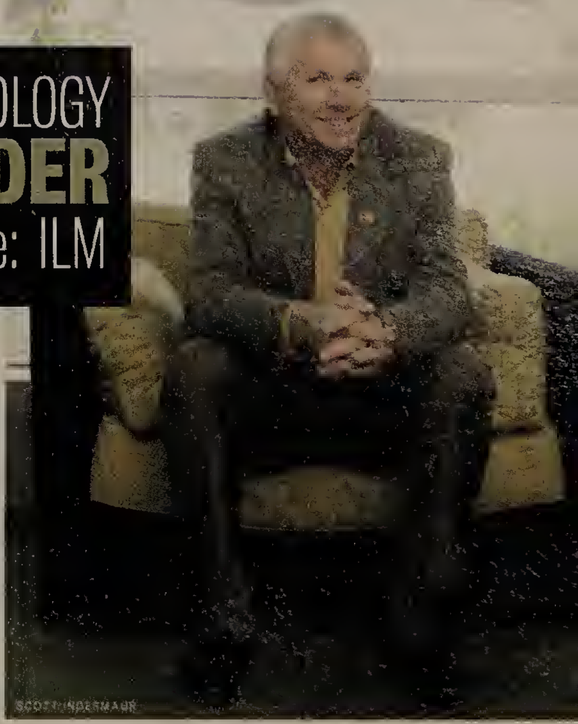
TECHNOLOGY INSIDER
Storage: ILM



MasterCard International's Jim Hull is eagerly awaiting new tools slated to ship next year that will let him begin implementing information life-cycle management. His goal is to get a better handle on 260T bytes of data. ILM, a long-term strategy that involves classifying and treating data based on its business value, is taking the storage world by storm. **Package begins on page 38.**

If you're looking for an out-of-the-box ILM offering, you're out of luck. But it's not too early to begin planning for ILM. **Page 44.**

The Fred Hutchinson Cancer Research Center in Seattle is saving $100,000 by moving some data from disk to tape, as part of its three-tier ILM strategy. **Page 48.**

ONLINE: Check out our IT Briefing Webcast featuring Senior Editor Deni Connor. **www.nwfusion.com, DocFinder: 1129.**

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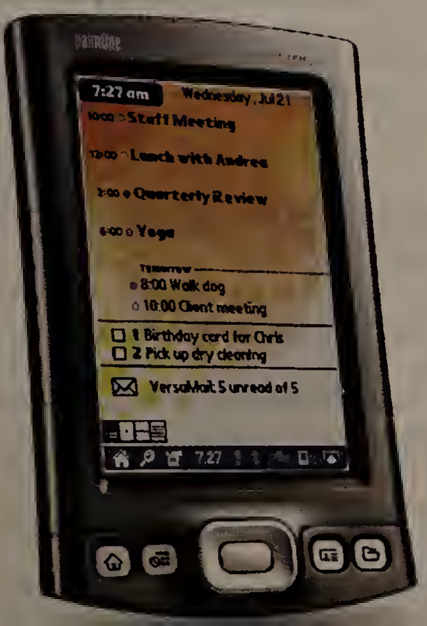

PalmOne's Tungsten T5 can double as a 256M-byte storage drive. Page 34.

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Exclusive

Network World Fusion Radio: The hidden costs of VoIP

Bandwidth isn't the only thing you have to be concerned with when rolling out VoIP. Are your network closets and cabling up to snuff? Gary Audin of Delphi joins us to discuss the physical costs associated with VoIP. **DocFinder: 4134**

Network World Fusion Radio: Patching problems and higher education

Licensing restrictions from software vendors, with Microsoft being the bull's eye, make it hard for colleges and universities to ensure all machines on their networks, students' in particular, are properly patched. Rodney Petersen of Educause discusses this issue and what's being done to remedy it. **DocFinder: 4135**

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Columnists

The Wireless Wizards

What do we worry about for large-scale WLAN deployments?

The Wizards answer a reader who asks: "We want to scale up our WLAN to very many users over large areas. Are there are any standards associated with such large enterprise configurations?" **DocFinder: 4136**

Telework Beat

Georgia telework takes hold

Net.Worker Managing Editor Toni Kistner says a year in, two programs are seeing good results. **DocFinder: 4137**

Small-Business Tech

ACT fuels vibrant small business community

Columnist James Gaskin says the new version of venerable sales tool includes Excel hooks and improved PDA sync. **DocFinder: 4138**

HomeLAN Adventures

Home network predictions

Senior Reviews Editor Keith Shaw outlines a new IDC report that defines the nuts and bolts of the connected home. **DocFinder: 4139**

Seminars and Events

Weekly Webcast Newsletter

Our weekly newsletter delivers information on Webcasts on Network World Fusion — your 24/7 source for solutions and strategies, with links, resources and answers you need. Covering topics such as security, applications and wireless, our Webcasts are focused, single-topic briefings from technology experts. **DocFinder: 2542**

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News Bits

R&D relief

■ President Bush last week signed a bill that included an 18-month extension of an R&D tax credit sought by many IT groups. Bush signed the Working Families Tax Relief Act of 2004, a $146 billion law designed to provide tax cuts to the middle class. The bill included $13 billion in corporate tax cuts, more than half of that for the extension of the R&D tax credit. Technology organizations such as the Computing Technology Industry Association have long called for a permanent extension of the tax credit, but the bill extends the current tax credit through Dec. 31, 2005. The R&D tax credit, first passed as a temporary credit in 1981, already had been extended 10 times. It lets U.S. firms conducting R&D activities get a tax credit of up to 10% of R&D spending.

E-Rate program troubles continue

■ In the face of waste and fraud charges, the government's E-Rate program has been put on ice. Congress set up the E-Rate program in 1996. The program now has a budget of $2.25 billion to help schools purchase network equipment and services. Critics say schools and IT vendors have skirted competitive bidding requirements, charged for equipment that is not allowed to be funded, and requested millions of dollars in unnecessary gear. The Universal Service Administrative Co., which oversees the E-Rate program, halted funding in August, pending adoption of new accounting procedures. The FCC told USAC to change its procedures by Oct. 1 in response to E-rate audits and Congressional charges of waste, fraud and abuse — but apparently no action has been taken, and schools have been left scrambling to pay for services. It wasn't clear when the funding would resume.

Haven't we heard this before?

■ Many years ago Oracle CEO Larry Ellison touted that really cheap "network computers" would one day rule the network landscape and put a crimp in Microsoft's visions of desktop dominance. It never happened. But the idea is being revived by a group of chip makers and partners in China. The Open Source Networked Computing group is touting a $150 computer that runs Linux software and will have the equivalent of open source hardware because many chip makers could manufacture the chips. Chip makers PMC-Sierra, Mips Technologies, ATI Technologies and a handful of Chinese companies also plan to produce the machines. Sun and Wyse already make similar devices so it's not clear how these new boxes will compete — especially if they are sold in the U.S.

No good deed goes unpunished

■ A new Trojan horse program discovered last week that attacks and removes adware is circulating on the Internet, according to Symantec. The program, called Downloader.Lunii, attempts to kill off computer processes and delete files used by adware programs such as Powerscan and BargainBuddy. But Lunii is not entirely benevolent. Like other Trojan horse programs, it also modifies the configuration of Microsoft Windows machines and attempts to download files from a remote location, Symantec warns. Lunii works by halting Windows processes that adware programs use to communicate and by removing known adware programs from systems it infects. The Trojan program also modifies a Windows file called the "hosts" file, inserting its own list of bogus Web sites, which may block access to certain Web pages, Symantec says. The company recommended that its customers update their virus definitions and provided instructions for removing malicious programs. (See www.nwfusion.com, DocFinder: 4153.)

Microsoft investigating ASP.Net hole

■ Microsoft said it is investigating a reported vulnerability in its ASP.Net that could let an attacker bypass security on a Web server and view sensitive content. The company last week published an advisory for Web site administrators on the vulnerability and provided instructions for mitigating the effects of the hole, which is in a component of ASP.Net called the "canonicalization routine." Attackers could create URLs designed to exploit the flaw, letting them bypass authentication or Windows authorization on Web applications that use ASP.Net, Microsoft said. ASP.Net is the latest version of Microsoft's Active Server Page technology that lets developers create Web-based applications by embedding into Web pages small programs that are written in languages such as Visual Basic.

TheGoodTheBadTheUgly

Snuffing out spyware. The U.S. House of Representatives last week passed two bills — one by a vote of 399 to 1 and the other 415 to 0 — aimed at punishing those responsible for sneaking spyware onto computers. The Spy Act would impose stiff civil penalties while the Internet Spyware Prevention Act would give the Department of Justice power to crack down on violaters, who could wind up doing jail time. Lawmakers are expected to combine the bills by year-end. ▼

Not so super. The U.S. Telecom Association and the Telecommunications Industry Association last week said that the show will go on for Supercomm next summer in Chicago, but that there are no plans for the event to continue after that. The companies, which will be exhausting their five-year deal next year, jointly own the name Supercomm. With roughly 30,000 show-goers last year, attendance was up from the year before despite the overall industry continuing to have its ups and downs.

Legra disappears. The shakeout has begun in the overfunded wireless LAN switch market. NextHop Technologies, a Mountain View, Calif., software vendor that specializes in Layer 3 IP routing software, says it has acquired certain assets of wireless LAN switch vendor Legra Systems and that other assets are being divvied up among other buyers. Officials from Legra, a Burlington, Mass., company that introduced its first switch less than a year ago, did not respond to inquiries.

COMPENDIUM

Some hearty hacking

Like to tinker? OK, silly question. Of course you do. Hack A Day promises a new hack, mod or DIY project every day. You know, for those days when you just have to build your own Lava lamp, or overclock your PDA. ***Tinker with it online at www.nwfusion.com, DocFinder: 4150.***

Forbes.com Tests New Data Center

Spirent helps leading business site ensure performance

Michael Smith, Vice President and COO, Forbes.com

"By helping us prevent downtime, Avalanche saves us time and money."

If you want up-to-date business news, chances are you've visited Forbes.com. The popular Web site is known not only for its original, in-depth reporting but also for its comprehensive lists. These lists range from the Forbes 2000, a ranking of the world's biggest companies, to surveys of the best business schools.

To ensure their site meets visitors' expectations for performance and availability, Forbes.com tests its Web infrastructure regularly with the Avalanche load-testing appliance from Spirent Communications. Testing with Avalanche not only helped the company prepare for their move to a new data center, but also assures Forbes.com that their Web site is prepared to handle the spikes in traffic that come with the release of its popular lists.

Moving to a New Data Center

Forbes.com is one of the most trusted information resources for international business leaders and senior executives. The site provides real-time business news, stock and mutual fund quotes, comprehensive company profiles and a wide array of interactive tools, including the famous Forbes lists.

In late 2003, the company realized that Forbes.com had outgrown its data center. In December, Forbes.com prepared to move to a new center that could better accommodate its growth.

"There was absolutely no question that we were going to stick with the Avalanche!"

"We'd been in our existing site for four years and had outgrown it," says Michael Smith, vice president and COO of Forbes.com. "We were upgrading our hardware to new Foundry Networks core routers and switches and our software to Linux, so we had a chance to start fresh and make sure the site became faster and more scalable. We want to ensure that the user experience is as responsive when we're experiencing high traffic on an atypical list release day as it is on a regular business day."

To ensure the cutover would be successful, Forbes.com decided to test the stability and availability of its new Web infrastructure with the Avalanche 2500 load-testing appliance from Spirent – a product the company had used to test its Web site since 2001. "There was absolutely no question that we were going to stick with the Avalanche," Smith says.

As one of the top business sites on the Web, Forbes.com gets a high volume of traffic on a daily basis. However, that traffic level spikes on the days that the site releases its lists. In addition, Forbes.com adds new functionality every week to the 150-plus applications that run the site. The company can't afford for its site to be down, because visitors will simply click over to a competitor's site.

"It's critically important that we constantly test the site to ensure that it has the scalability to handle both surges in traffic and the addition of new software," Smith says. "We need a tool that can push traffic far beyond what we think we'll get, so we can analyze our upper limits and anticipate where things might break."

Optimizing TCP Throughput

During the tests on Forbes.com's new data center infrastructure, the team used the Avalanche test appliance from Spirent Communications to generate a mix of users and traffic rates that emulated the expected traffic on Forbes.com. The test team configured the Avalanche to simulate 30,000 concurrent users and 12,000 to 15,000 hits per second while the site served up more than 400 Mbps of content.

Through Avalanche testing, the team discovered that throughput was below acceptable levels, with the site serving only a fraction of the required pages. By testing with Avalanche, they identified the potential breaking point of the new site.

The team quickly set up tests to identify the limiting performance thresholds across several metrics – bandwidth, transactions per second and concurrent users. Once the bottlenecks were identified, it was revealed that the Forbes.com traffic mix had been constrained by servers that were accepting a low rate of new TCP connections.

The servers in the new data center had been tuned to create more TCP connections than the previous process could actually thread. By re-tuning the new servers to deliver a higher level of TCP throughput, a more robust user experience was achieved.

"We used the Avalanche to test the limits of the new site until we felt that it was ready to flip," Smith says. "When we cut over, we had every confidence that it would run perfectly — and it did."

Flawless Performance

After optimizing the Web servers, Forbes.com used the Avalanche to test its application servers, the performance of hardware devices such as load balancers and even the failover site. When the day came to switch over to the new site, Forbes.com felt completely secure that the new Web infrastructure could handle the demands of real-world traffic.

"We used the Avalanche to test the limits of the new site until we felt that it was ready to flip," Smith says. "When we cut over, we had every confidence that it would run perfectly – and it did. The enhanced reliability and performance achieved through Avalanche testing has delivered immeasurable value. By helping us prevent downtime, Avalanche saves us both time and money."

Contact Spirent at 1-800-927-2660 or to download the Forbes.com case study, go to:

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HP keeps pace with policy-based wares

BY PHIL HOCHMUTH

HP last week announced new policy-based network security and bandwidth management software, as well as upgrades, that the company says will let its ProCurve LANSwitch customers better control end-user access to network resources and bandwidth.

The upgrades include a new version of HP's ProCurve Manager Plus switch software. Also debuted was the Identity Driven Manager (IDM) application. Together, these two server-based applications can work with a third-party RADIUS server and let companies control access and bandwidth, HP says.

ProCurve Manager ships with all HP ProCurve switches and lets users configure and manage switch settings from a Windows-based PC. ProCurve Manager Plus is an enhanced version that is purchased as an upgrade. (The Plus version is required to run IDM). When deployed with a Microsoft-based authentication server, this framework provides an easy way to activate security and traffic management features on switches, says Brice Clark, HP ProCurve worldwide director of strategy and business planning.

"This lets network managers worry less about network plumbing and concentrate more on larger issues that affect their business," he says.

In an IDM-based network, an end user's logon credentials first would be checked against a RADIUS server, then checked again on the Manager/IDM server running on a separate, dedicated server. If the RADIUS server authenticates, IDM looks at the end-user ID and enforces predefined policies on the switch regarding the end user. This could mean putting end users from different departments into separate virtual LANs, where only each respective department's applications were available. Guest logons could be created to allow for only Internet access, and only during certain times of the day.

Policies also can give different bandwidth-usage profiles for various end users' identities. Web/print/e-mail users could be limited to a 10M bit/sec connection, for instance, while power users running high-bandwidth applications could get up to 1G bit/sec to the desktop.

HP says the IDM software's directory can be tied to a Microsoft Active Directory scheme, allowing the Microsoft RADIUS and HP servers to share an end-user database. Policies are created and managed in a Windows-based client application, which lets lower-level IT staff easily make complex changes to a large switch network.

"In the past, you would set VLAN policies manually, and you would have to do that by command line on every device," says Josh Johnson, an analyst with Synergy Research Group. He says this method of network administration also was hard to tie to a company's business processes and origination. "You probably had to keep notes somewhere that VLAN A was for accounting, VLAN B was for HR and so on," Johnson says. "[IDM] simplifies that."

Setting up this IDM-based infrastructure requires HP ProCurve switches at the LAN edge, a Microsoft Internet Authentication Server — a RADIUS-based server — and a dedicated server running the HP switch management and IDM software. Since the HP authentication scheme uses media access control (MAC) address filtering, 802.1x authentication and Differentiated Services QoS, a firmware upgrade might be required to add these features to switches.

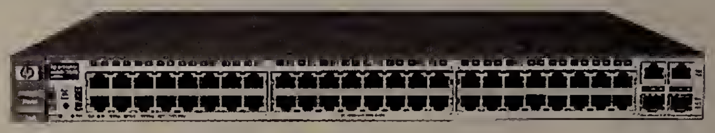
HP's new policy-based network capabilities are an answer to products such as Enterasys' User Personalized Network and Trusted End System frameworks for mixing network policies, access control and bandwidth management. Alcatel's Automated Quarantine Engine and Cisco's Network Admission Control technologies offer comparable features. But HP's IDM lacks support for checking anti-virus and client machine software compliance, whereas Enterasys and Alcatel support this on their systems. Cisco does this on routers, and will add switch support next year. HP says IDM will have a way to verify client PC/laptop credentials and compliance in the next release in mid-2005.

In addition to the management software launch, HP introduced an upgrade for its ProCurve 2600 and 2800 10/100/1000M-bit/sec wiring closet switches. New features include MAC-address-based authentication and locking, support for more VLANs (raising the maximum from 60 to 256), as well as jumbo frame support. This software upgrade is free for ProCurve switch users.

IDM costs $5,500 and requires ProCurve Manager Plus, which costs $3,200. ■

HP's switch pitch

New features in HP's ProCurve switch software include:



- Policy-based security and bandwidth allocation.
- MAC address filtering and authentication.
- Support for jumbo frames on 2600 and 2800 series switches.

Polycom heads for the desktop

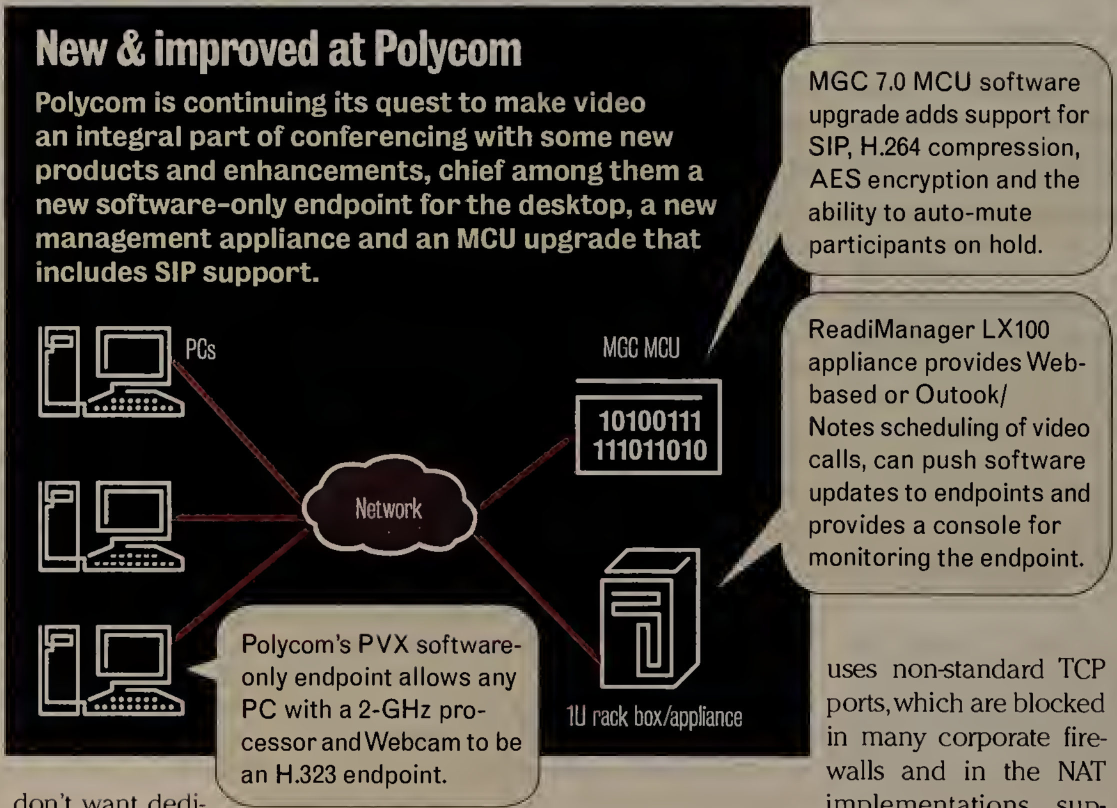
Company also adds management appliance and upgrades MCU software.

BY JASON MESERVE

Polycom this week is set to take the wraps off a software-only desktop video client that requires no special hardware, and a management appliance to simplify customer call scheduling and distribution of software updates to endpoints.

The new products are scheduled to be unveiled at the Polycom Users' Group (PUG) meeting in Tampa, Fla., this week. Along with the new products, Polycom also is expected to announce Version 7.0 software releases for its MGC line of multipoint control units (MCU) and WebOffice collaboration suite. The MGC upgrade will feature Session Initiation Protocol (SIP) among other enhancements for multi-party calls.

Polycom's new $150 PVX endpoint runs on a PC outfitted with Windows 2000 or later, and can be used with a standard Webcam, which coupled with the cost of the software delivers an H.323 endpoint for less than half of what's available in hardware products today. It supports the newer H.264 video compression standard, Polycom's Siren14 14-KHz audio compression and the company's People+Content technology, which lets PC-based information (such as a slide presentation) be viewed with the video window. PVX is targeted at telecommuters and office workers who don't want dedicated conferencing hardware on their desks. PVX also can integrate with Cisco CallManager.



New & improved at Polycom

Polycom is continuing its quest to make video an integral part of conferencing with some new products and enhancements, chief among them a new software-only endpoint for the desktop, a new management appliance and an MCU upgrade that includes SIP support.

MGC 7.0 MCU software upgrade adds support for SIP, H.264 compression, AES encryption and the ability to auto-mute participants on hold.

ReadiManager LX100 appliance provides Web-based or Outook/Notes scheduling of video calls, can push software updates to endpoints and provides a console for monitoring the endpoint.

Polycom's PVX software-only endpoint allows any PC with a 2-GHz processor and Webcam to be an H.323 endpoint.

Because the PVX is H.323 based, it suffers the same fate as traditional conferencing appliances when it comes to network address translation (NAT) and firewall traversal. H.323 uses non-standard TCP ports, which are blocked in many corporate firewalls and in the NAT implementations supported in traditional routers from vendors such as Linksys and Netgear.

However, PVX does a better job of detecting when NAT is in use and directing users how to work around the issue with their home-office broadband routers, says Ira Weinstein, senior

See Polycom, page 16

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Vortex

continued from page 1

“[Bush is] a disaster on the deficit, and I think the deficit is really dangerous, and he’s a disaster on global policy.”

Mitchell Kertzman
Partner, Hummer Winblad Venture Partners

two-day technology event — expressed in public forums and privately — was simply, anybody but Bush.

Among the president’s more passionate critics was Mitchell Kertzman, a partner with Hummer Winblad Venture Partners, former CEO of Liberate Technologies and founder of Powersoft.

“The tech industry thrives on innovation and challenge, but the innovators and the challengers are rarely the people with massive amounts of money to throw at political campaigns,” Kertzman told a fully engaged “town meeting” audience that brought a Mount St. Helens energy level to the soothingly posh Bacara Resort & Spa in Santa Barbara, Calif. “You’ve got to get somebody [in the White House] who cares about something other than how much money these people can donate.”

Kertzman said he believes that focusing on the specifics of technology-related policy differences misses a more important consideration.

“What matters to the technology industry is macroeconomic policy because we’re all sensitive to macroeconomic policy . . . and that’s where I think Bush is a disaster,” Kertzman said. “He’s a disaster on the deficit, and I think the deficit is really dangerous, and he’s a disaster on global policy.”

Venture capitalist Geoffrey Moore, author of business books such as *Crossing the Chasm* and co-producer of the conference, told the audience he fears that the country’s lagging broadband position relative to Asia and the administration’s philosophical resistance to globalization will prove costly.

“Our telecommunications policy is ground zero for our competitiveness. We’re watching the competitiveness of this nation cross the Pacific,” Moore said. “So just as my father’s generation saw Europe pass the torch to America, we’re in the process of passing the torch to Asia, and damn it, we really ought to be a little bit more careful with the torch. We need to see a lot better leadership on these issues than what we’re getting.”

Jeffrey Blumenfeld, a partner with Crowell & Moring who specializes in anti-trust and intellectual property law, contends that the Bush administration squandered an opportunity to do better.

“Instead of abandoning any effort to make the 1996 Telecom Act work, he should have worked to make it work,” Blumenfeld said. “The FCC and the [Department of Justice] — who share responsibility for this — continually backed off when they needed to be more aggressive.”

But the president had supporters at the conference. John Oxaal, a general partner with Sevin Rosen Funds, waded in and braved the anti-Bush riptide.

“There is a libertarian or free-market wing of the Republican Party, and there’s a socialist wing of the Democratic Party,” Oxaal said. “I think Kerry fully embraces the socialist, government-control wing that has been discredited in the Soviet Union, East Germany vs. West Germany, North Korea vs. South Korea.”

“It’s looking backward to pursue these state-controlled policies that are favored by the Democrats, particularly the liberal wing of the Democratic Party, he said. “I think free markets win and President Bush has generally been on the free-market side of the equation.”

J. Roger Moody, a former executive at AT&T and CBS, now chairman and CEO of Sandpiper Synergies, said he believes the industry has been well served by the Bush team and would benefit from four more years of that direction.

“A lot of people rail against [FCC Chairman Michael] Powell, but at least he’s trying to keep things less regulated,” Moody said. On this score a Kerry administration “might be bad because he’s certainly the liberal type.”

Moody also praised the Bush administration’s opposition to regulating VoIP and fears Kerry “may want to tax everything.”

After listening to the anti-Bush barrage at the town meeting, Moody said he believes the president’s supporters were simply keeping their powder dry rather than engage the fervent critics.

Maybe so, but supporters had plenty of opportunity to engage over the two days.

“It’s no secret to anyone that the scientific community is very concerned,” said Francine Berman, director of the San Diego Supercomputer Center, when asked which candidate would better serve research work at her center.

“We’re worried about the U.S. falling behind and not being competitive. We’re worried about a paucity of funding for research and development. We’re worried about not being able to put together the infrastructures that are required for us moving ahead,” Berman said. “Whoever the next president is, scientists will be very happy to see scientific concerns become important again.”

Berman declined to name the candidate she believes would be more likely to make that happen.

Others needed no such prodding. Longtime IBM strategist John Landry, now chairman and CTO of Adesso Systems, said “I think Kerry is far more hip to technology’s impact on the economy than Bush seems to be. And a lot of that comes from Kerry having been a senator in Massachusetts for as long as he has.”

With Bush backers outnumbered and/or hesitant to engage, it fell to one of the town-meeting panelists who supports Kerry to add balance to what was often a one-sided debate.

“I don’t think they’re really all that different in terms of technology,” said David Kirkpatrick, a senior editor/columnist at *Fortune* magazine. “I don’t think Kerry has shown any particular sensitivity to technology. In fact, his arguments about outsourcing have been so idiotic that it’s really been a negative. It’s one of the things that I know people in the technology industry who support Kerry have choked over, and it’s led them to be not as public about their support as they might otherwise be.” ■

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Disk storage wares on tap from StorageTek

■ **BY DENI CONNOR**

At its annual customer event, StorageTek will introduce the FlexLine online systems, which are designed to provide customers with primary, business-critical and secondary, archival storage.

The company is expected to introduce FlexLine FLA300 and FLX210 arrays, which store transaction-intensive primary data. It also is expected to preview the FlexLine 600, which will be used for storing and archiving data that isn’t going to change or be used often.

“StorageTek is trying to present itself as an [information life-cycle management] company,” says Nancy Hurley, senior analyst with Enterprise Strategy Group. “To do ILM you need to have disk, archive, primary tape and the software to manage it all.”

The 2G bit/sec Fibre Channel FLA300 array has a 70% increase in I/O performance over existing FlexLine FLA200 arrays. The FLX210, designed for smaller environments than the FLA300, contains 14 Serial Advanced Technology Attachment drives and supports as many as 112 Serial ATA drives. It is part of the FLX product family that includes the mid-range FLX240 and high-end FLX280.

The FlexLine 600 is a lower-performing box than the FLA300, which is optimized to hold a lot of data. Containing an intelligent storage processor, the FlexLine 600 will use Serial ATA drives and will start at 3T bytes of storage. It could receive data migrated from either the FLA300 or FLX210 arrays.

Jeff Vetterick, vice president for Advanced Financial Solutions in Oklahoma City has StorageTek’s FlexLine for storing the check images his company takes for banking customers. Because check images don’t change but do need to be accessed frequently, Vetterick needs storage that is not only inexpensive, but from which customers can retrieve data quickly.

“Any type of check imaging is very storage-intensive, and we are capturing thousands of records a minute,” Vetterick says. “One scanner in fact captures 2,400 check images per minute running 24 hours a day.”

Meanwhile, StorageTek also announced a virtual tape appliance that works with Windows, Solaris or AIX host computers. The Virtual Storage Manager (VSM), a disk-based appliance that emulates a tape library, saves floor space and lets data be retrieved more quickly than it could be from tape.

The VSM for Open Systems incorporates StorageTek’s Serial ATA-based FlexLine 600 storage array with virtual tape software. Its capacity, which ranges from 4T to 44T bytes of storage, can support 3 million virtual tape volumes and four Fibre Channel ports for attachment to the storage-area network.

The VSM for Open Systems lets customers consolidate backup data to one system. An IT manager can create rules that specify how data is backed up and to which tape volume. VSM Open works with backup software from Veritas Software, Legato Systems or IBM/Tivoli. It competes with EMC’s Virtual Tape Library and Fujitsu-Siemens CentricStor Virtual Tape Appliance.

The FLX210 starts at $10,000; the FLA300 starts at $15,000. The FlexLine 600 and VSM for Open Systems are expected to be available in the first half of next year. ■

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Nortel's Contivity picks up SSL

SSL VPN blade

■ BY DAVID NEWMAN AND JOEL SNYDER, NETWORK WORLD LAB ALLIANCE

Your end users might like the new SSL VPN Module 1000 that slides into Nortel's Contivity IPSec VPN boxes because it provides easily navigable remote access to a wide group of LAN-based applications at decent speeds. But administrators won't like the lagging management interface and lack of detailed access control and endpoint security features.

The SSL VPN Module 1000 blade plugs into Contivity 1740, 2700 or 5000 Version 5.0 systems. A dedicated co-processor running Alteon's tried-and-true Secure Sockets Layer accelerator code, Version 4.2, and a poorly designed configuration and management system are its base.

The blade performs pretty well (see "A decent SSL performer," right), and Nortel's portal page is easy to use and navigate. And the SSL VPN code works well with a range of applications, including Exchange's Outlook Web Access; JavaScript programs; and HTML, FTP and Common Internet File System servers.

But when we tested the product with Java- and Flash-based applications, we ran into interoperability issues. Nortel's prescribed fix is a downloadable Java applet that runs on the workstation and serves as a proxy to tunnel traffic to the Contivity system. This fix gave us access to applications, but hampered our access to the rest of the Internet and required a complex, manual rewrite of the browser's proxy configuration file.

Nortel offers some rich application translation and proxy features. It detects and fills out form-based authentication processes on Web pages the way most browsers do. However, this single sign-on implementation works only if the username and password are the same for the SSL VPN device and for every Web site.

Nortel implements a unique dimension to its user profile, letting you create multiple types of users within the same user group that then affects the appearance of the portal to those users.

Contivity users can choose from standard browser-based SSL VPN applications or a true network extension client, using IPSec or SSL transport, all nicely bundled together. But this bundling belies the lack of underlying coordination. Nortel describes its SSL VPN as "tightly integrated" with IPSec, but the only thing tight about the integration is that they share the same power cord.

The SSL VPN is managed by a different, decidedly unfriendly, GUI than its IPSec counterpart. Access control defined on one side must be replicated using the other GUI. If you want to support multiple groups with overlapping access control rules, the amount of information you have to manually reproduce is astounding. Some critical features, such as auditing information, are not accessible via the GUI.

More troubling is the lack of detailed access controls in the SSL VPN. While you can distinguish between source IP address and authentication method, you can't give users access based on time of day, browser or SSL security level.

Nortel's TunnelGuard, an endpoint security checking and verification tool, has been in the IPSec Contivity box for years, but is not included in the SSL VPN side. Nortel officials say it will be added later this year.

Newman is president of Network Test. Snyder is a senior partner at Opus One. They can be reached at dnewman@networktest.com and joel.snyder@opus1.com, respectively.

Net Results

Contivity 1740 with SSL VPN Module 1000

OVERALL RATING **3.68**

Company: Nortel, www.nortelnetworks.com/products/01/ **Cost:** Contivity 1740: $7,000. SSL VPN Module 1000: $8,000, includes 50 user licenses. **Pros:** User-friendly portal; decent performance; good application support; rich application translation and proxy features.
Cons: Weak management tools; lacks detailed access control; subpar endpoint security; no integration between IPSec and SSL VPN tools.

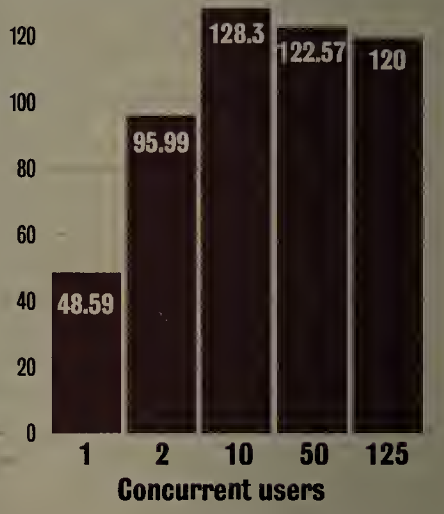
The breakdown	
Application support/interoperability 30%	4
Access control 30%	3.5
Performance 25%	3.5
Authentication 10%	4
Logging and reporting 5%	3
TOTAL SCORE	3.68

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

SSL VPN forwarding rates

Nortel's SSL VPN Module 1000 was able to handle requests for average sized objects (1K byte) for up to 1,000 users with no failures. When we tested it with requests for large objects (5M byte) shown in this chart, the box moved SSL traffic at an aggregate rate of 128.3M bit/sec when fielding requests from 10 users. The rate dropped slightly, to 120M bit/sec, for up to 125 users. With 150 or more users, the Contivity failed to return some of the large objects.

Forwarding rate (M bit/sec), 5M-byte HTTP objects retrieved over SSL



A decent SSL performer

We measured the Nortel SSL VPN Module 1000 running inside the Contivity 1740 against three performance metrics: SSL tunnel setup/teardown rate (see glossary of SSL terminology at www.nwfusion.com, DocFinder: 4149), maximum concurrent users and forwarding rate.

The SSL tunnel setup and teardown test determines how quickly a device can respond to new users' requests. Each user requires a unique SSL session to be negotiated, which is a processor-intensive task.

We configured the Spirent Avalanche to emulate up to 64,000 unique hosts, each attempting to log on to the Contivity 1740 box (see How we did it, DocFinder: 4148). The Contivity 1740 topped out at 50 tunnels per second. When we tried to use 51 tunnels per second, the box continued to function but some transactions failed.

For a box of this size, 50 sessions per second is a middle-of-the-pack rate. At that rate, a Contivity 1740 can set up 4.3 million sessions per day.

The maximum-concurrent-users test sought to determine the greatest number of users capable of simultaneously retrieving data through the Contivity 1740. In our test, 1,000 users were able to log on and retrieve objects.

The final performance test, forwarding rate, measured how quickly the Contivity 1740 could move HTTP traffic. We configured Avalanche to retrieve large (5M-byte) objects through the Contivity 1740. Large objects produce high forwarding rates because there is more object data relative to the amount of SSL and TCP handshaking traffic.

The Contivity 1740 moved data over SSL at a peak rate of 128.3M bit/sec when tested with 10 users. With lower or higher numbers of users, the forwarding rate tailed off. However, the aggregate forwarding rate remained flat at about 120M bit/sec for anywhere up to 125 concurrent users.

This test determined not only the highest rate but also the highest user count the Contivity 1740 could handle with zero failures. In all tests we attempted with 150 or more users, the Contivity failed to forward at least some users' requests.

In "sizing" an SSL system for production use, the 1,000-concurrent-user count is probably the more meaningful result. Average HTTP object sizes tend to be small, typically around 1K byte or so, making forwarding rate less critical.

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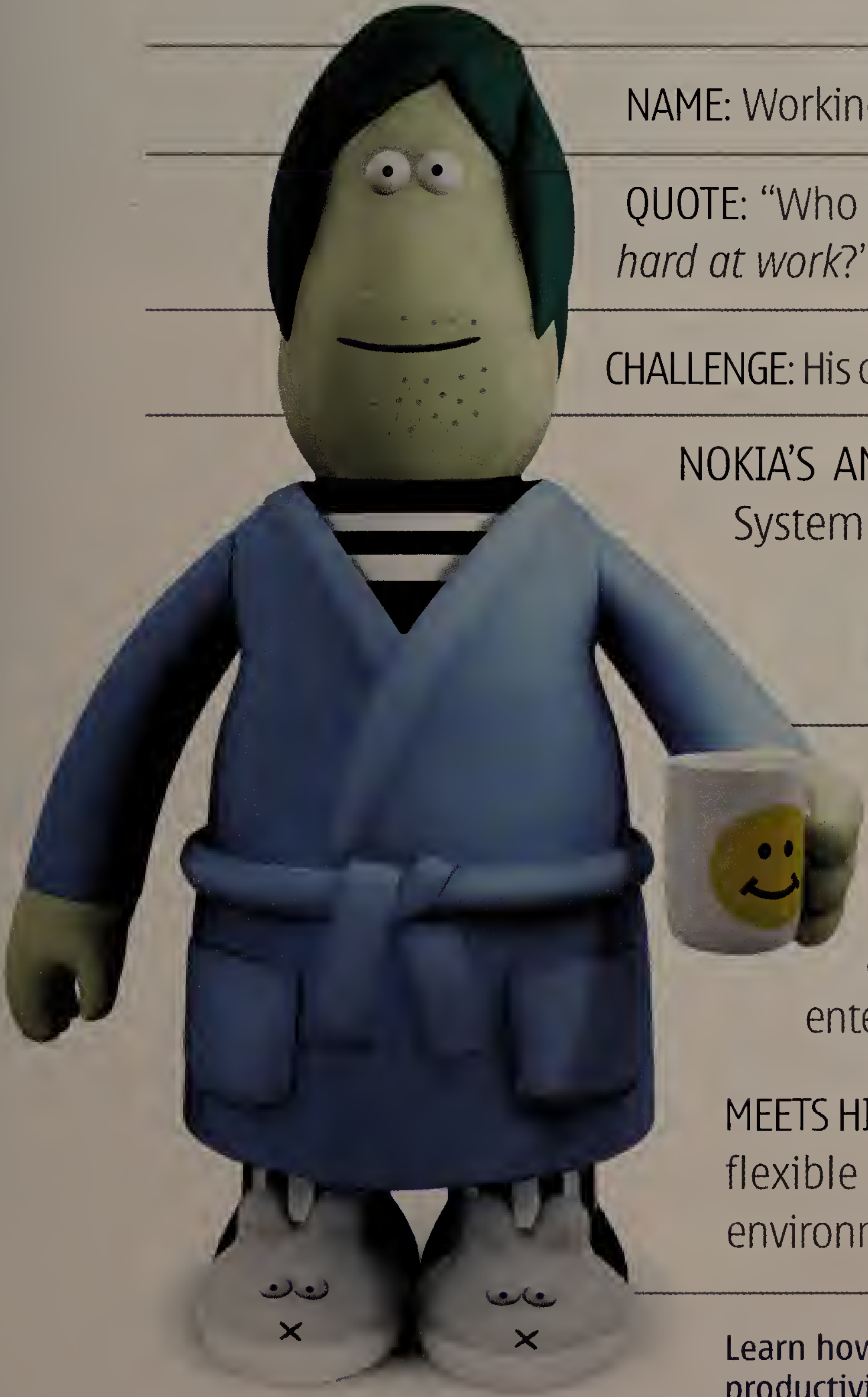

NAME: Working-from-Home Walter

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ID mgmt. consolidation: CA nabs Netegrity

BY DENISE DUBIE AND JOHN FONTANA

Computer Associates' announcement last week that it plans to fork over $430 million for Netegrity is the latest sign that control of the identity management sector of the network security market is becoming concentrated in the hands of some of the industry's biggest players.

The buyout, expected to close within 90 days, adds secure Web access and provisioning technologies to the authentication, authorization and administration products in CA's eTrust Identity and Access Management Group.

While observers have expected an industry shakeout, this deal came as a surprise because Netegrity posted solid financial results for the first half of the year and appeared to be trying to distance itself from other identity management specialists by making acquisitions. Earlier this year, Netegrity snapped up Business Layers to add provisioning and allocation software to a portfolio that already included authentication products.

CA says the Netegrity acquisition is part of its plan to concentrate more heavily on security products, which in accounting for 17% of new bookings this quarter represent one of the company's hottest businesses. Identity management is one of the hottest segments in security, fueled by compliance concerns and the need to shore up internal systems.

"Identity management is simply too big and important of an issue for large, multinational enterprises to rely on a hodge-podge of products from small vendors, many of which have overlapped in functionality," says Jamie Lewis, president at Burton Group.

Consolidation continuum

Computer Associates, with its Netegrity acquisition plans, joins competitors that also bought identity management technology to round out their product suites.

Date	Company	Acquisition
September 2004	Red Hat	Acquisition: Netscape Directory Server and Netscape Certificate Management System, directory products from AOL [Edit note: Red Hat bought specific directory products, not AOL entirely].
October 2004	Computer Associates	Netegrity: Web access control and provisioning technology.
March 2004	HP	TruLogica: user-provisioning software.
January 2004	Netegrity	Business Layers: provisioning technology.
November 2003	Sun	WaveSet: user-provisioning software.
September 2003	HP	Select Access: authorization and authentication technology from Baltimore Technologies [Edit note: HP did not buy the entire company]
September 2002	IBM	Access360: identity management software.
June 2002	IBM	Metamerge: directory integration software.

Other big vendors targeting identity management include Sun, which last week responded to the CA/Netegrity deal by offering a free upgrade from Netegrity's SiteMinder to Sun's Java System Access Manager. Sun made an identity management company acquisition last year when it bought out WaveSet.

Also last week, IBM staged an event in Washington, D.C., to launch a batch of identity management services with partners. The new services are aimed at helping companies build and centrally manage systems for securing physical premises and virtual information repositories — from employee badges, door locks and security cameras to data, computers and networks. The technology bundle includes IBM's Tivoli Identity Manager software, smart cards from ActivCard, fingerprint-based biometric verification technology from Bioscrypt, and public-key infrastructure software from VeriSign. GE is supplying components for facility security, and ImageWare Systems is supplying identification products for managing and issuing access-control credentials.

The IBM effort would seem to indicate that there continues to be room for vendors large and small in identity management.

"Our fate is controlled by ourselves — consolidation does not threaten our existence," says Gordon Eubanks, CEO of Oblix, an identity management company whose name has been bandied about as a possible acquisition target of Microsoft. He says companies need smaller players to help them secure heterogeneous environments.

"Platform vendors are positioning themselves to say they do what we do, but when savvy customers take a closer look they see

See ID management, page 61

IBM

continued from page 1

to fit into environments that require high-end storage systems to complement the modular midrange-capacity devices many customers favor these days.

Managing that high-end/midrange marriage has become key for the high-end vendors — among which IBM ranks third behind EMC and Hitachi — because customers are buying fewer of the biggest systems.

IBM has included virtualization technologies in its arrays that stem from the company's SAN Volume Controller, currently a stand-alone appliance, and zSeries and i5 servers. Virtualization lets companies simplify distribution of stored data across arrays.

While Hitachi offers virtualization across different vendors' storage systems and EMC promises to do so, IBM's new arrays will let customers exploit virtualization technologies via Tivoli Storage Manager back-up and data management applications, which can be hosted on the arrays.

The introduction of the TotalStorage boxes also marks IBM's initial support for Fibre Channel drives in its high-end storage arrays instead of its proprietary Serial Storage Architecture, which is used to attach SCSI drives in an array. Both new arrays also support mainframe Fibre Connection attachments, and the larger DS8000 will support Enterprise Systems Connection, too.

The arrays will feature many of the technologies found in IBM's Enterprise Storage Servers, such as FlashCopy, peer-to-peer remote copy and parallel access volumes, which boosts performance by allowing concurrent I/Os to the same volume.

Word that the DS6000 would enable replication of data to other IBM storage devices, including Enterprise Storage Servers, has customers intrigued.

"I need to replicate data, but I don't want to spend the same amount on the storage at both ends of the pipe," says Ken Walters, senior director of enterprise platforms for the Public Broadcasting Service in Alexandria, Va. He says he might, for example, use a more-expensive system at headquarters and less-expensive systems at disaster-recovery locations.

Industry watchers say IBM could use a boost to its business, particularly at the high end. A recent Schwab Soundview report said: "IBM continues to show weakness in the high end, with its share down two points [year-over-year, 16% in first-quarter 2004 vs. 18% in first-quarter 2003], which we attribute to share loss in mainframe-attached storage to EMC."

IBM does not split out financial results for its storage hardware business from general hardware, but did say in a recent financial report that: "Storage Systems revenue increased for the second quarter and first six months of 2004 compared with the same periods in 2003 due to increased demand for external midrange disk and tape products."

For the first six months, storage revenue increased 10% over the first six months of 2003, IBM said.

The company also is expected to upgrade its TotalStorage virtual tape server, a disk-based array that emulates a tape library. While the product has supported only 12 SCSI 3590 tape drives, customers will be able to attach as many as six 3592 Fibre Channel drives. This is expected to improve throughput about 15%. ■

Top of the line

IBM's new arrays will be its highest-capacity storage boxes yet.

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Maximum capacity	67T bytes	192T bytes
Cache	4G bytes	256G bytes
Host computer connectivity	Z/OS, Unix, Linux, OS/400	Z/OS, Unix, Linux, OS/400
Controllers	Power processor running Linux	2 to 4 Power processors running AIX
Drive capacities	73G, 146G, 300G bytes	73G, 146G, 300G bytes
Ports	8	64
Competition	EMC CX700, DMX800	EMC DMX1000, 2000, 3000; Hitachi TagmaStore Universal Storage Platform

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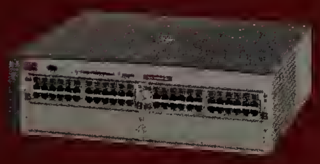

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Carriers speak out on consolidation

AT&T, MCI seem ripe for the picking, but RBOCs say they are not shopping.

■ **BY JIM DUFFY AND DENISE PAPPALARDO**

Despite reports that AT&T and MCI are preparing to seek or are actively seeking buyers, the RBOCs are all but ruling themselves out as potential suitors.

SBC and BellSouth both said last week they have their hands full with Cingular Wireless' $41 billion acquisition of AT&T Wireless. SBC and BellSouth jointly own Cingular.

And Verizon, which is reportedly looking to acquire Vodafone's stake in Verizon Wireless, made no mention of an interest in acquiring an interexchange carriers (IXL) at last week's Goldman Sachs Communacopia conference in New York, where CEOs of the three RBOCs spoke. AT&T President David Dorman canceled his speaking engagement at the conference at the last minute, just before AT&T announced that it was laying off 20% of its 61,600 employees this year instead of the previously announced 8%, and writing off $11 billion in assets as it exits consumer telephony.

"Consolidation would be helpful [to the industry], but that's not in our plan."

Ed Whitacre
Chairman and CEO, SBC

Published reports have speculated that AT&T is trimming down in order to attract buyers as long-distance voice and data become less profitable, and recent court rulings are likely to raise the price of wholesaling access facilities from the RBOCs. The latter situation prompted AT&T to exit consumer telephony.

MCI, meanwhile, already has confirmed that it is seeking an acquirer. It is believed the RBOCs would be interested in the interexchange carriers (IXC) to expand their presence in nationwide enterprise data services such as frame relay and IP VPNs.

But SBC and BellSouth say they are not.

"Consolidation would be helpful" to raise SBC's profile in the enterprise telecom market "but that's not in our plan," SBC Chairman and CEO Ed Whitacre said at the Goldman Sachs conference.

Similarly, BellSouth "certainly has enough on its plate right now" with regard to the Cingular/AT&T Wireless merger, says BellSouth CEO Duane Ackerman. BellSouth and AT&T had courted each other earlier last year, but a deal fell apart when the parties could not agree on a price.

Verizon did not address the IXC issue directly, but CEO Ivan Seidenberg indicated that the RBOC has other priorities, such as ramping up its fiber-to-the-premises buildout and expanding its 3G wireless data service. Seidenberg's comments at the Goldman Sachs conference prompted some Wall Street firms to raise spending guidance for the company for this year and next.

As for possibility of acquiring Vodafone's 45% stake in Verizon Wireless, Seidenberg said he is "comfortable" with the amount of control Verizon maintains under the current arrangement. Analysts have speculated that Verizon, which is looking to divest up to 9 million to 10 million non-strategic rural-access lines, could use some of the proceeds to buy out Vodafone's share of Verizon Wireless.

As for the IXCs, AT&T declined to comment on Dorman's abrupt cancellation of his Goldman Sachs appearance and on the speculation surrounding it. MCI, which also appeared at the Goldman Sachs conference, said consolidation is inevitable.

"Ultimately, it will happen," said MCI CEO Michael Capellas. "Consolidation makes sense from a technological and customer delivery point of view. It will happen because the delivery model . . . and economics make sense."

However, Sprint sees itself more as an acquirer than an acquiree.

"What a difference a year and a half makes," says Sprint CEO Gary Forsee. "A year and a half ago to two years ago, we would have been characterized as being more on the other side of [merger and acquisition] activity, with less control over our own future."

That's not to say Sprint is on a buying binge. Quite the contrary, Forsee suggested.

"We like our mix of assets and certainly part of that equation is wireless . . . with [wireless representing] 52% of our revenue mix today," he says. "For us to go in and take on another set of assets or change that mix would disrupt what is now a very clear agenda." ■

Polycom

continued from page 8

analyst at Wainhouse Research. PVX requires a 2-GHz processor to run with a Webcam. For those with older systems, the software will work with Polycom's ViaVideo desktop unit, which has its own audio/video processing capabilities.

Alan Phillips, videoconferencing specialist for the Imperial Office of Education, is looking forward to the PVX release because it will allow him to finally implement a central address book for his users in the Imperial County School District in southeastern California. Phillips has between 250 and 300 ViaVideo's running, but is using older versions of the software because newer updates have a compatibility problem with the county's Ridgeway firewall tunneling appliance. The version of ViaVideo software currently deployed does not support central address books.

Polycom is not the first to market with a software-only endpoint. VCON is shipping vPoint with similar features, including H.264 support, which offers better-quality video with less bandwidth. For stand-alone use, vPoint costs $199 and requires a USB authentication key when used outside a VCON Media Xchange Manager installation.

Polycom also is delivering some long-promised additions to its MGC MCU with Version 7.0 of the software that powers it. The new release features SIP integration, Advanced Encryption Standard encryption and support for H.264 multipoint calls. Encryption has become a bigger issue with compliance regulations in the healthcare and financial sectors, and the SIP integration helps expand the number of devices that can be brought into a call.

Polycom sees SIP as the future protocol for all IP conferencing, but says it is not abandoning its H.323 and H.320 (ISDN) roots any time soon.

"The SIP video is a nice change for Polycom," says Zeus Kerravala, vice president of enterprise infrastructure research and consulting at The Yankee Group. "They were always proponents of SIP on voice, but not on the video side."

On the management side, Polycom is releasing ReadiManager LX100, a 1-U-high appliance that schedules video calls via a Web interface or integration with Microsoft Outlook or Lotus Notes. ReadiManager also can be used to monitor the health of various conferencing devices in a network and push out software updates to endpoints. It's a "lite" version of more-complicated software offerings from Polycom that have more features and functionality, but also more complexity. ReadiManager LX will be priced starting at $10,000.

Finally, Polycom is releasing Version 7.0 of its WebOffice collaboration portal. The update features integration with Microsoft Live Communication Server and MSN Messenger. Users of the three will be able to see who is online and what communications options (voice, video, chat) are available to connect with them through the Messenger interface. Polycom also is embedding a stripped-down version of PVX in the system so users can launch and receive point-to-point calls from the WebOffice interface. Version 7.0 is a free upgrade for existing users with a service contract. Pricing normally starts at $200 per seat. ■

■ Read about the move toward IP video from ISDN. PAGE 28

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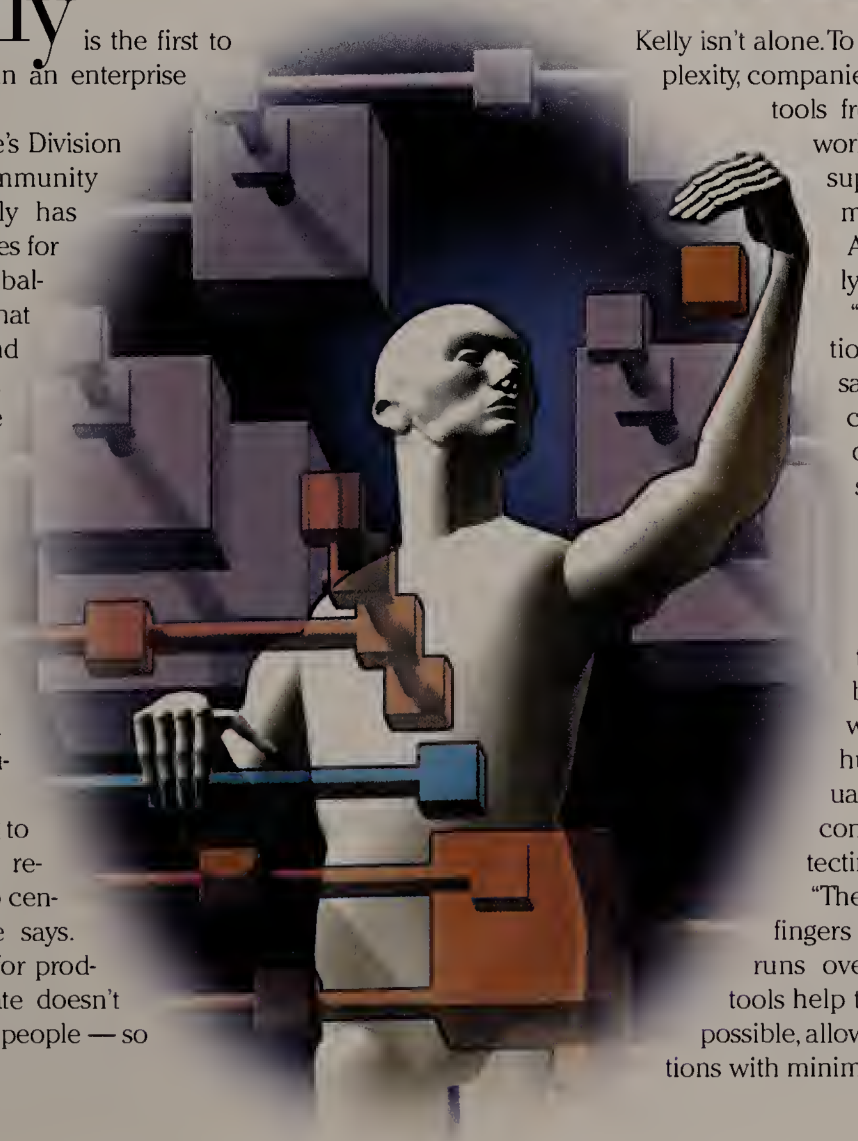
NetworkWorld
Perspectives
October 11, 2004
Insights on key issues facing network IT

INSIDE THE COMPLEXITY CRISIS

How IT managers are banking on intelligent infrastructure to ease their layered burden.

■ *By Sandra Gittlen*



Bob Kelly is the first to admit it; he's knee-deep in an enterprise complexity crisis.

As CIO at New York state's Division of Housing and Community Renewal in Albany, Kelly has seen his operating expenses for the agency's vast network balloon to almost double what he spends on hardware and software capital expenses.

Kelly attributes this rise — to $4 million — to the layers upon layers of technology that exist throughout the three main offices and nine remote sites his team supports, from security tools to server farms to application patches and updates. And he sees trouble on the horizon.

"We see the state is going to have difficulty getting resources so we're turning to centralized management," he says. "It's easier to get money for products than staff — the state doesn't like to look like it is hiring people — so we need to consolidate."

Kelly isn't alone. To reduce costs driven by complexity, companies are turning to automation tools from major systems and network players as well as smaller suppliers of advanced management tools, says Andreas Antonopoulos, principal analyst at Nemertes Research.

"The largest cost is the operations overhead — cost in salaries, training, attracting specialized people," Antonopoulos says. To fight back, he says IT managers are looking to blade servers, virtualization tools for server and storage resources, bandwidth allocation programs, and application management software to boost intelligence in the network and reduce the need for human intervention. Eventually, IT shops will feature self-configuring, self-healing, self-protecting networks.

"The fewer people that stick their fingers into the network, the better it runs overall," he says. "Automation tools help the network be as flexible as possible, allowing users to deploy applications with minimal overall operational costs."

ILLUSTRATIONS BY GIACOMO MARCHESI

Automation has significantly reduced the number of people it takes to run networks, especially in data centers, Antonopoulos says. "Networks are becoming less specialized and as commoditized as possible."

The evidence: VoIP, Web and file servers all can be deployed on the same server or moved from one server to another, which lets IT managers more easily expand or shrink the resources they need.

Getting here from there

The IT complexity crisis has been building for some time, exasperated in part by the buying frenzy unleashed to deal with Y2K. More technology has been layered on without much consideration for network and operation dynamics.

Consider the emergence of the major corporate software suites. "Companies spent a lot of money putting in new applications that created islands of integration — such as ERP and CRM systems," says Tony Bacardi, senior vice president of software at IDC. Then they lumped on complex management tools that didn't work together and featured disparate data dictionaries and schemas, he says. "It's just been one unproven layer of software after another."

Bacardi says there is so much complexity that company executives often wonder if they are getting their money's worth. A recent IDC study found that less than 20% of chief officers felt they were using the full capabilities of their myriad enterprise systems.

One way to deal with complexity is to turn to specialized tools designed to address specific problems.

"IT shops have gone out to solve discrete problems, and they've bought discrete appliances," says Anthony James, product marketing manager at Netscaler. "They've had three choices: upgrade my servers, redo my infrastructure by adding bandwidth or tweak the applications. They've rolled out distributed denial-of-service protection systems, compression technologies for the WAN, TCP offload, caching."

"They've been justifying single boxes to solve single problems," James says. "But managing all that is incredibly complex. And you've got personnel costs, gear costs, support costs, maintenance fees and training fees for each of those boxes."

Netscaler is just one of many start-ups trying to consolidate multiple operations like DoS protection, encryption and compression into one device. "Reducing the number of boxes you're managing in effect reduces your overall operating expenses," he says.

New intelligent devices also reduce the amount of gear an IT shop needs. For instance, rolling out automated TCP offload or TCP multiplexing takes the load off servers. "A server that had to deal with 10,000 connections can cut down to 3,000 connections. Or you can cut a server farm down from 15 to 20 — saving on licensing, management and maintenance," James says.

Caching is another big win. Intelligent new tools that let users automatically run reports can tell whether information is dynamic or static — letting the static information be cached. "This reduces the pressure on data center resources to churn out those reports," he says.

The secret sauce: Interoperability

As automation and intelligence efforts gain steam, success will depend on the interoperability of the tools. Products must be able to talk to each other without IT managers fussing with configurations and command lines.

IDC Vice President of Software Tony Bacardi says, "Vendors are getting religion about standards. It's no longer OK to have proprietary APIs."

Michael Marks, director of strategic alliances and market development group at Concord Communications, says, "If we can manage multiple types of network technologies and types of applications and in a consistent way and all in a consistent workflow, then companies can lower their operating expenses because they don't have to train their teams on each program. It's our responsibility to understand the nuances of IT infrastructure."

Bacardi says this shift has come about because IT shops are demanding it. "Everybody has full-time staff allocated to fixing flaws," he says. "They perceive this as unneeded complexity and they'd rather get on to doing new things rather than babysitting the network."

He says IT managers are rebelling. "They're saying, 'Don't come in front of us until your stuff works together. We don't have time to be your integration shop, and we'd rather wait until you work it out.'"

Vendors are quick to tout their relationships with partners. For instance, Varun Nagaraj, vice president of product management at Extreme Networks, says his company is working closely with Avaya on automated convergence tools. The companies are delivering an integrated management tool that lets customers view phones as network elements, which lets customers manage the converged voice and data infrastructure via one network map, he says.

"The industry has to realize no one controls the total solution and we need to tie into a larger infrastructure," Nagaraj says. "We have to design networks to be able to be integrated and interoperable."

This will be music to IT managers' ears. "We keep saying to vendors, 'keep it simple,'" says Bob Kelly, CIO at New York state's Division of Housing and Community Renewal. "My staff doesn't have the time to learn yet another application, so the tools [we choose] have to be easy to use and understand."

— Sandra Gittlen

Back to the fun stuff

In addition to reducing operating expenses, the goal of building intelligence into the infrastructure is to let IT shops refocus their energies on changes to the network that will add to the bottom line. He says today, 90% of an IT shop's resources are spent fine-tuning apps.

Doug Wilson knows this dilemma well. As IS operations manager for Bay Area Credit Service in San Jose, Wilson manages a busy payment collection call center. He's implemented VoIP and automation tools that let his PBX servers tackle hundreds of thousands of collection calls each week, reporting back into databases on the varying degrees of success.

He also has rolled out a network of automated tools that manage and monitor live calls — notifying nearby supervisors if calls are taking too long or a collector is experiencing trouble. "Our supervisors used to have to walk around and look over people's shoulders," he says.

But Wilson has bigger plans. Today, if a client needs to establish what he calls a massive campaign, Wilson has to call other collection companies to see if they can pool resources to take on the business. If he finds enough takers, then he has to connect to all those resources — networks and servers — and create a temporary network. All this is painstaking, he says.

Ultimately he hopes he will be able to plug in the needs of the campaign, run a tool that is already attached to willing participants' networks to see what resources they have available, and establish a network on the fly with security, regulatory and other considerations in place. "We'd be creating a virtual company that could win that business," he says.

Today, when you add another layer of sophistication you hide a lot of complexity, Wilson says. "We want tools that leverage smarts over time and people."

For Jason Pape, pooling resources and managing them as one unit would be terrific.

Pape, corporate network administrator for International Hospital Corp. in Dallas, acts as virtual IT director for the nine hospitals his company manages and owns. But the hospitals are spread across multiple countries, including Mexico and Brazil.

He says he'd like to see automation tools that let him easily roll out, manage, update and patch applications on servers across continents. With "different countries, different languages, different standards," there are a lot of hurdles, Pape says.

> "THE CRITICAL ALARM NOTIFICATIONS NEED TO BE DONE BETTER. IT GETS TO THE POINT WHERE YOU'VE GOT ALL THESE ALARMS GOING OFF BUT HOW DO YOU KNOW WHICH IS IMPORTANT?"
>
> **Bob Kelly, CIO, New York state's Division of Housing and Community Renewal**

"Everything in the U.S. medical world is dictated by insurance, but not overseas," he says. "We don't have the same infrastructure needs, and that makes all of this difficult." Pape depends on vendors in each hospital location to manage their software packages. He says this helps keep costs down.

"Most of the responsibilities of the IT staff at the hospitals is geared toward improving the systems and supporting the physical parts of the networks," he says. "We leave the logistical part of the software to the vendors and make sure we keep a good relationship with them."

But Pape says that as he tries to standardize applications and tools for the hospitals, the vendor contracts will have to go away. He says he hopes to automate the task of configuring, deploying and managing the new applications.

"Every automation tool out there — I don't care if it's a simple script or a whole program — they say it can work miracles, but you still have to make it talk to your database and recognize variables and work with the parts you have," he says. "That's just the reality of it."

New York state's Kelly says it all goes back to the complexity issue. "There are so many different parts to the network and there are new tools for everything. Take security, you've got firewalls, anti-spam, anti-virus.... How do we manage all that when we have limited resources?"

Already his team has begun rolling out tools to get a better handle on operations. For instance, he uses a dashboard tool to view how his servers in all locations are performing. But he says automation tools are still lacking. "If something goes wrong on those servers, you still need someone on-site to handle the problem." He adds that policies for alarms are still nascent.

"The critical alarm notifications need to be done better," he says. "It gets to the point where you've got all these alarms going off but how do you know which is important? Our trained staff learns to deal with this over time — but that's just it, over time."

Kelly has a bellwether he says will let him know when the complexity crisis is easing and automation tools are ripe. When he can be alerted to rising temperatures in a remote data center and instantly resolve the problem by switching to battery backup or completely shutting down the servers because the HVAC, battery backup and server systems are all connected, he'll know he's reached nirvana.

Gittlen is a freelance writer in Northboro, Mass., and former events editor at Network World. *She can be reached at sgittlen@charter.net.*

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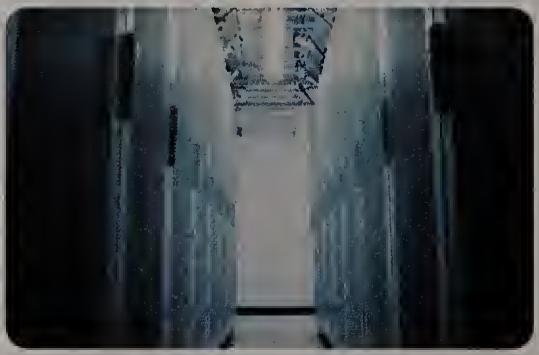

In response, more and more functions are being loaded onto servers – requiring more servers. And applications are forced to do more than they can or should. Usually with less than satisfactory results.

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Short Takes

■ **Siemens** recently agreed to resell routers and switches from **Huawei's Quidway** product line, eight months after the two companies formed a joint venture for manufacturing new mobile broadband systems in China. The partnership will let Siemens offer a range of routers, bridges and other network systems. Siemens abandoned the network manufacturing business in May 2003 when it sold its network subsidiary Unisphere to Juniper. Siemens and Huawei plan to invest more than $100 million in the venture.

■ **Network Appliance** last week announced the **NetApp NetCache 6.0 software** for its NetCache appliances, which guard against security threats, and minimize virus and hacking threats. The new features are proxy support for the sock protocol and authentication support for NTLMv2, which let customers consolidate proxy and authentication servers. For service provider customers, Network Appliance has incorporated Windows Media 9 capabilities, which allow fast delivery of streaming media. The NetCache appliance starts at $8,000. The new features are expected to be available in December.

■ **Fujitsu** last week said it plans to unveil upgrades to its Primergy tower and rack-mounted servers that will use the 64-bit capable version of the Xeon processor, code-named **Nocona.** The company is set to announce two new tower servers, called the Primergy TX200 S2 and TX300 S2, and two rack-mounted servers that include the 64-bit processor, the Primergy RX200 S2 and the RX300 S2. The TX200 S2 will support as much as 12G bytes of Double Data Rate memory and will come with Xeon processors running at between 2.8GHz and 3.4GHz. The clock speed of the TX300 S2's chips will range between 3.2GHz and 3.6GHz, and it will support as much as 16G bytes of DDR2 memory. Pricing for the systems will start at $2,219. The rack-mounted servers start at $2,602.

The multi-port NIC dilemma

■ **BY PHIL HOCHMUTH**

The emergence of 10G Ethernet network interface cards gives network professionals a new tool for getting more bandwidth to servers, but industry observers say some users might find better value for scaling server pipes by installing multi-port Gigabit NICs.

Until 10G prices come down — and they are expected to — users can save almost 80% by buying multi-port Gigabit cards instead of a single 10G Ethernet card, if bandwidth needs don't exceed 4G bit/sec. High-volume Web/intranet or database servers could be good candidates here, experts say.

But for companies looking for a NIC to move large blocks of data on and off servers — such as network-attached storage devices — 10G NICs might be more versatile.

Intel was the first to market a 10G Ethernet network controller in 2002, and other vendors such as S2IO and Chelsio Communications have since debuted 10G NIC products. These products promise network speeds as high as 5G to 7G bit/sec per connection — because of limitations in operating system software and PCI-X bus speeds — and can be trunked to bring Gigabit speeds in the double digits to some high-end boxes.

The multi-port benefit

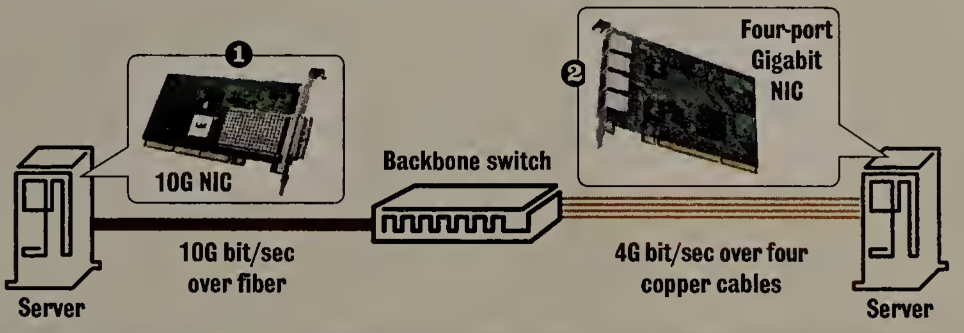
But some observers say if a need exists for a 2G to 4G connection, users would be better served by installing multi-port Gigabit cards. These cards offer as many as four 1000Base-T ports on one PCI-X card and can be trunked to create a virtual 4G pipe.

With the cost of 10G NICs in the $2,000 to $5,000 range, multi-port NICs offer a lower price-per-Gigabit cost, with prices about $400 per card.

Made by such vendors as Intel and Syskonnect, four-port NICs also typically run on copper wiring, which is less expensive to install than fiber cabling — a requirement to run 10G Ethernet. More importantly, quad-port NICs don't need a 10G Ethernet port on the other end, as prices for 10GBase-LX switch ports are still in the $7,000 to $8,000 range.

The multi-port alternative

While 10G NICs promise great speed, users interested in running big-bandwidth servers should weigh their bandwidth needs and budget and consider multi-port gigabit NICs as an alternative.



① PCI-X bus speeds in most servers limit 10G Ethernet NICs to about 5G to 7G bit/sec, and run only over fiber cabling. But they have long reach and greater total bandwidth than multi-port Gigabit NICs.

② Four-port Gigabit NICs can reach up to a full 4G bit/sec and eliminate a single point of failure with multiple connections. And on a per-gigabit basis, the cost is 86% less than a 10G NIC.

"If you need to go above one Gigabit" on a server connection right now, "it's more cost-effective to go with a multi-port Gigabit card vs. a 10 Gigabit" NIC, says David Newman, president of Network Test, a network equipment testing firm, and a member of the Network World Lab Alliance.

Besides the cost of the equipment, Newman says other factors involved with running a data center play into the decision of whether to go multi-port Gigabit or single-port 10 Gigabit.

"The capital cost of interface [cards] is only one factor," Newman says, "and maybe not the most important factor."

Having to deploy more switch ports to support trunked Gigabit could end up being costly as well and harder to manage than a single 10G port.

"If you've got server farms with 64 of 128 servers and they all have four trunked Gigabit links, you quickly run up your power consumption on the servers, as well as real estate on the switches they connect to," Newman says.

The 10G option

On the other hand, for users of very large servers, 10 Gigabit is becoming the more attractive option.

At the San Diego Supercomputer Center (SDSC), a high-end IBM P-Series is used as a kind of scientific number-cruncher-for-hire. The box lets researches attached to Internet 2 tap into the device for various projects, which puts the server in high demand. The server can accommodate up to 10 interface cards that run Gigabit Ethernet, but trunking Gigabit links did not solve bottleneck issues.

"Aggregating multiple Gigabits is great," says Nathaniel Mendoza, an IT technician at the SDSC. "But you can't get a stream over one Gigabit through," on the trunked connections. Although the server had a total of about five to seven Gigabits of bandwidth, no single flow, such as a file transfer, could exceed 1G bit/sec. This was a problem when the only job the P-Series box had was to move a chunk of data.

Just last week, SDSC installed a 10G NIC from Intel, and the performance boost was immediate. "This gives us the ability to get more data out of the supercomputer more quickly," Mendoza says.

In addition to the flow issue, there is a less technical reason Mendoza prefers the single 10G NICs.

"I don't like running cables," he says. "So I only have to run one cable [when connecting to a 10G NIC on the P-series]. That makes my life significantly easier. . . . Anything we can do to keep down the amount of cables we have laying around is helpful."

Costs can kill

The high price of 10G NICs, compared to what a Gigabit NIC costs, still prevents every server at the SDSC from having its own 10G adapter.

"Cost would be the only reason why I wouldn't put in a [10 Gigabit NIC],"

See NICs, page 19

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Back-up protection on tap from storage vendors

BY DENI CONNOR

Symantec, EMC and start-up Permabit last week announced software that helps customers with the replication, migration, and backup and recovery of data.

Among the introductions:

- Symantec, which acquired start-up PowerQuest in September of 2003, unveiled LiveState Recovery, disk-based back-up and instant-recovery software.
- EMC announced Symmetrix Data Recovery Facility/Star (SRDF/Star), software that replicates data to two remote data centers for business-continuity purposes. The company also announced replication software that works between its Symmetrix and other vendors' storage arrays.
- Permabit introduced Permeon Replication, software that replicates archival data to remote locations for disaster-recovery.

Observers say users are increasingly interested in backup, recovery and replication because they are concerned about the integrity of their data. According to IDC, the market for data protection software alone, including backup, archive, hierarchical storage management, snapshot backup and replication, is expected to be $8.1 billion by 2006.

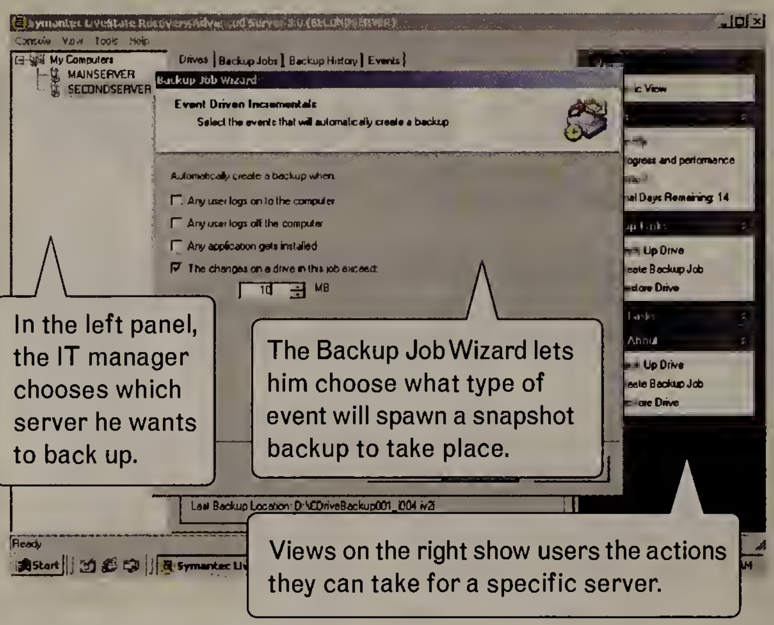
Symantec's LiveState Recovery captures a point-in-time operating state of a server or desktop, which includes the operating system, applications, data and settings, into one file. These snapshots are created without interrupting current applications. Users can perform full recoveries or recoveries of individual files and folders from a disk in minutes rather than hours.

"I can recover applications, data and operating systems if a file server fails and also use LiveState Recovery for backing up the servers in my customers' networks," says Jack Ledom, president of IT consultancy MCCS. "Because it is a disk-based package, it's much faster to recover data than it would be from tape. LiveState Recovery is much less expensive than Veritas' products."

LiveState Recovery can adjust back-up routines when events such as patches occur that could threaten the health or stability of the system. Using Symantec's pcAnywhere technology, servers and desktops can be remotely restored. LiveState Recovery is available in three models — LiveState Recovery Advanced Server 3.0 is $1,200 per server; LiveState Recovery Desktop 3.0 is $69.95 per desktop; and LiveState Recovery Standard Server 3.0 is $834.95 per server.

Strong backup

Symantec's LiveState Recovery product lets customers back up data to disk and instantly retrieve it.



Event Driven Incrementals

Select the events that will automatically create a backup

Automatically create a backup when:

☐ Any user logs on to the computer

☐ Any user logs off the computer

☐ Any application gets installed

☑ The changes on a drive in this job exceed: 10 MB

Last Backup Location: D:\CDriveBackup001_i004.iv2i

In the left panel, the IT manager chooses which server he wants to back up.

The Backup Job Wizard lets him choose what type of event will spawn a snapshot backup to take place.

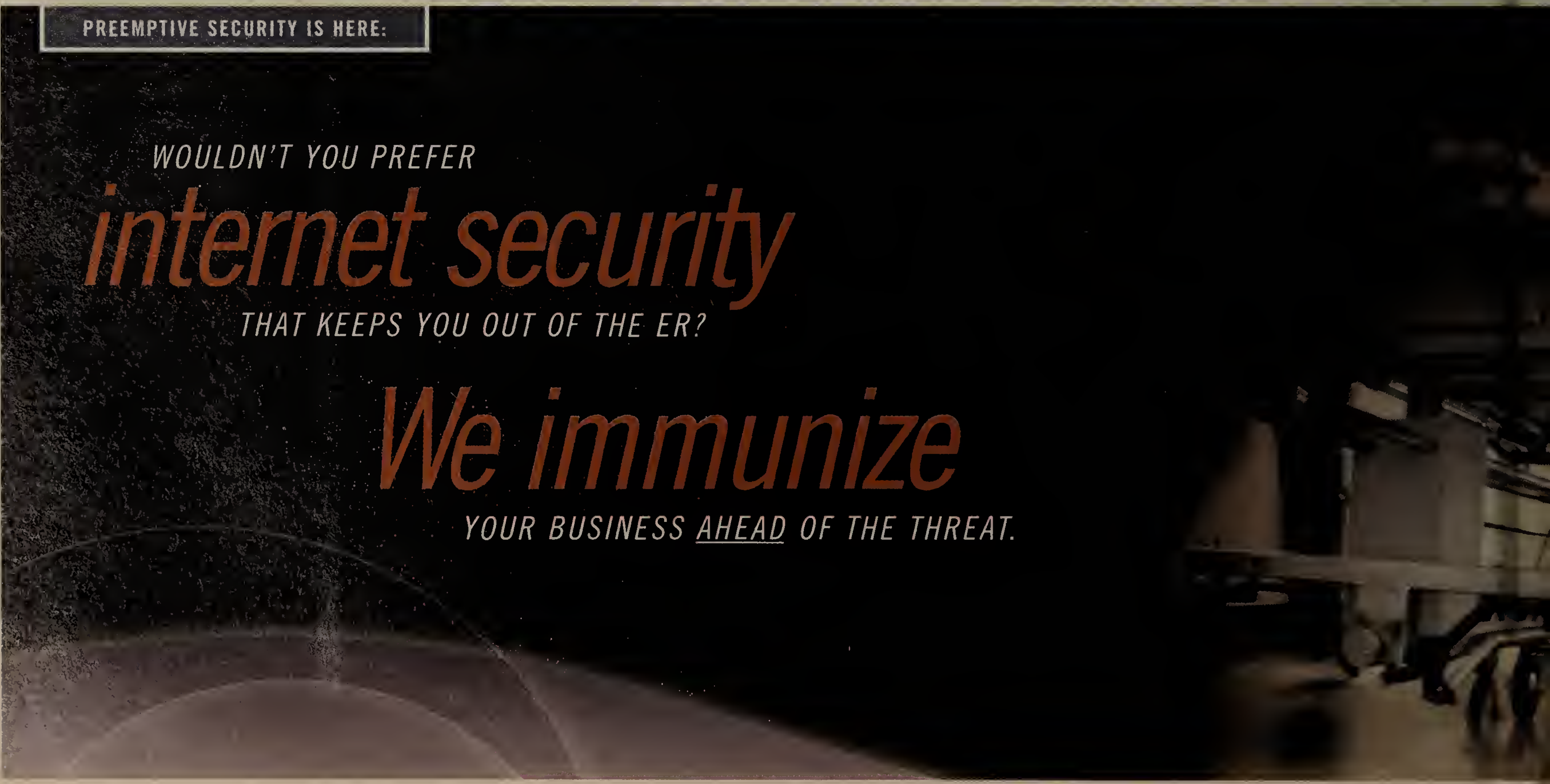
Views on the right show users the actions they can take for a specific server.

EMC announced high-end replication and data mobility software that lets customers better protect and migrate their business-critical data. Available for the EMC Symmetrix DMX Series array, SRDF/Star lets customers replicate data to two remote data centers. Previously, EMC's SRDF could only replicate between a host site and one remote data center. EMC says many of its financial customers needed the new capability because they have more than one back-up data center.

The company also announced EMC Open Replicator for Symmetrix, software that lets customers replicate data between EMC DMX systems and those from IBM, HP and Hitachi Data Systems. The software, which will be available in the first quarter of next year, initially will work with HP StorageWorks XP256, XP512 and XP1024, Hitachi Lightning and IBM TotalStorage Enterprise Storage Server. Support for mid-range storage arrays from HP, IBM and Hitachi will follow.

Permabit unveiled software called Permeon Replication for its fixed-content storage arrays. Permeon Replication works between sites to replicate archival data. Because the data being replicated is archival, Permeon Replication uses an asynchronous protocol over IP, which does not require acknowledgements of data delivery.

The software also satisfies the "second copy" requirement of the Securities and Exchange Commission 17a-3 and 4 that stipulates a duplicate copy of archived electronic records must be stored separately from the original. The software is available now and ships incorporated into the Permeon appliance. It is $2,500 for each terabyte of data replicated and requires two $25,000 Permeon appliances, one at each end of the connection. ■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Kevin Tolly

Hurricane Jeanne and instant disaster recovery

There are some benefits of living in New Jersey. Lack of hurricanes is the one foremost in my mind of late. Last year, we moved The Tolly Group to South Florida. In the past six weeks, we experienced more downtime than in a decade's worth of New Jersey summers. Disaster recovery, not surprisingly, rose up higher on the priority list.

Like most small businesses, one has to balance the time, effort and cost of back-up and recovery plans against the likelihood that said plans will be put to use. Given that, in more than a decade, we'd never lost power for any significant amount of time: A "cross-your-fingers" plus UPS strategy seemed acceptable. That would get us through those short "brownouts" so popular in New Jersey. It did not get us through Hurricane Frances.

While our Boca Raton headquarters was fortunate enough to be away from the eye, the area suffered significant damage, and, not surprisingly, power went out. In Palm Beach County, more than 500,000 homes and businesses went dark — and stayed dark.

We've been through two more hurricanes since then (Ivan and Jeanne) so I can't even recall how long we were down, but it was many days. No Web, no e-mail — as a company we appeared to vanish. Not good.

Once we came back online after Frances, we began to investigate ways to keep (at least) our Web online and our e-mail system going. But, in less than two weeks — before we could even finish researching our options — Hurricane Jeanne struck. It followed an eerily identical path as Frances, and — bam — down went our power.

Florida Power & Light was ready this time. Ready, that is to lower expectations. Their official announcement as the storm moved through the area was, and I'm not joking, "All power will be restored within three weeks." I felt ill.

With little else to do from my broadband-enabled evacuation enclave, I decided that doing something was better than doing nothing and decided to give "instant disaster recovery" a fling.

My plan: Find a hosting service not in Florida that supports ASP.NET, open an account, use FTP to copy the backup of the Web site I keep on my laptop — including the several hundred documents we've published in the past decade or so, call Qwest to change the DNS to point to the hosting site, be back online.

About two hours later, without any calls required to FlareHosting — which I picked off Google — and with just one phone call to Qwest, we were back online — even though power to our building was still (as it turned out) more than a day away. I couldn't believe it. Oh, and it is costing me less than $1 per day for my back-up site.

> **I couldn't believe it . . . it is costing me less than $1 per day for my back-up site.**

Kudos to FlareHosting, which certainly appears to have its act together, but kudos also to Microsoft for its ASP.NET architecture. I had absolutely no administrative access to my new Web server, and I didn't need it. I simply copied over my .Net programs and databases, and it just ran.

Power came on as we were switching over our SMTP to service provider VirtualConnect.Net. While their main focus is "scrubbing" your incoming e-mail, they also can hold on to your mail (like MailKeep) should your main system lose power. That, too, was a snap to set up.

If you don't have a back-up plan because you think it is too costly or too complex, think again.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

NICs

continued from page 17

Mendoza says. "But those costs are coming down. Once the 10 Gig E over copper standard is pushed down, it will continue to drop. Optics are still not cheap."

While the cost-per-Gigabit argument right now favors four-port NICs over single-port 10G NICs, that could change quickly. The Dell'Oro Group estimates that 10G NIC prices will drop from an average price of $6,000 per NIC this year to $3,000 in 2007.

The expected price drop in 10 Gigabit, and the development of a Category 6-based copper standard for 10 Gigabit (due in 2006), will make 10G NICs go the way of Gigabit Ethernet cards — less expensive and more widely used, observers say.

"A question people asked in 1997 was, 'So there are lots of good quad-port Fast Ethernet cards out there. Why do we need a Gigabit card?'" Network Test's Newman says.

SDSC's Mendoza agrees with this logic.

"It seems that all the arguments that were made against one Gigabit when that technology emerged are now happening around 10 Gigabit [the requirement of fiber cabling]. Now Gigabit costs almost nothing," he says. ■

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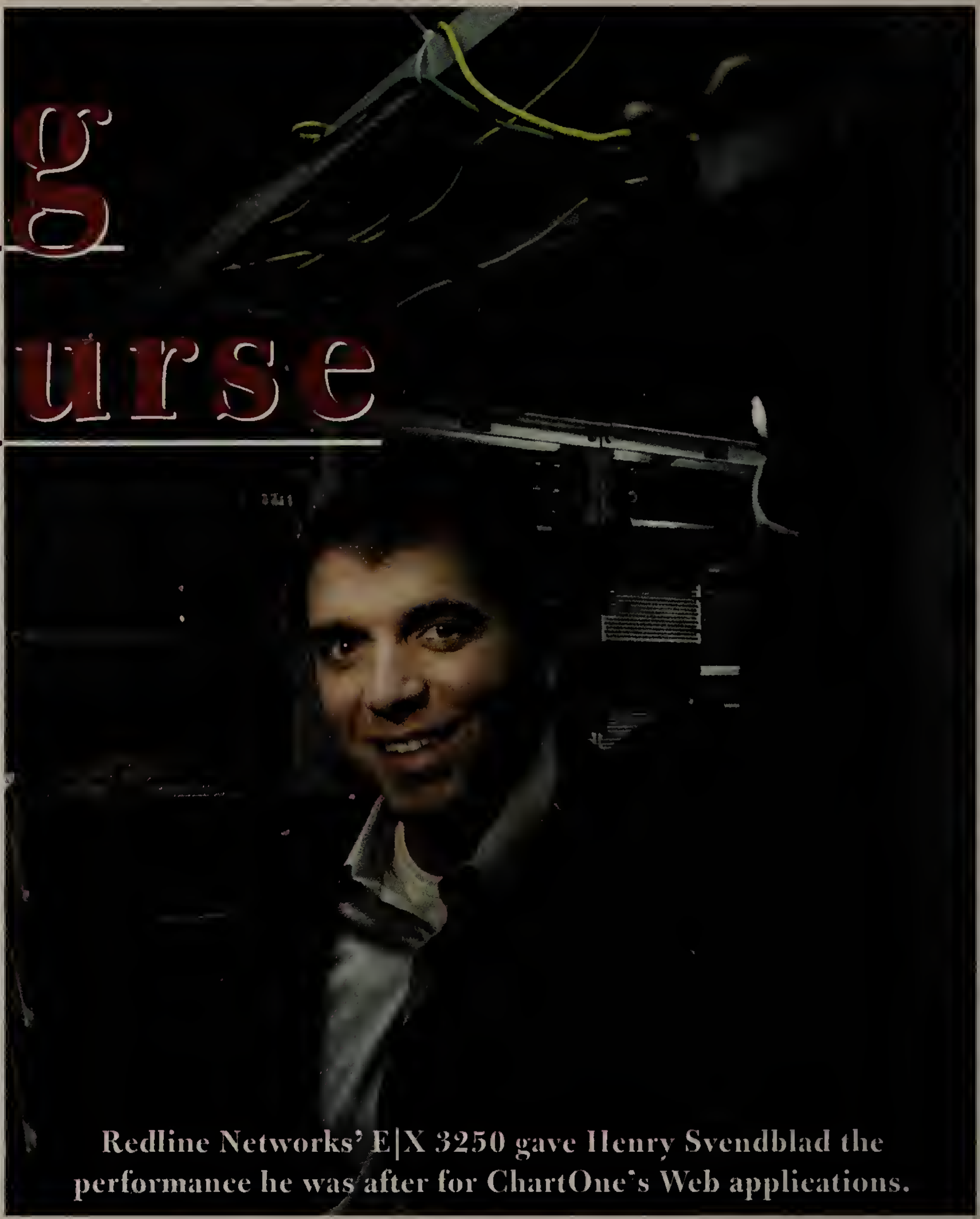
Charting a Web Course

Redline Networks helps medical records management firm ChartOne cure network pains and boost the business case for its Web-enabled ERP apps.



Redline Networks' E|X 3250 gave Henry Svendblad the performance he was after for ChartOne's Web applications.

Photograph by Robert Houser

NO IT EXECUTIVE LOOKS FORWARD TO ASKING upper management to spend $200,000 on a major system upgrade. But Henry Svendblad, director of IT at ChartOne, Inc., felt he had little choice.

ChartOne, based in San Jose, California, sells technology and services that help health care institutions easily and cost-effectively access and manage patient records. To better serve its customers, which represent 20% of hospitals in the U.S., and to ease the burden on its own IT staff, the company wanted to migrate its ERP applications to the Web.

Like many companies transitioning to Web-based applications, ChartOne hit performance snags that no amount of application tuning and new hardware could cure. Only after two years of trial and error did ChartOne find a cure in Redline Networks, which makes a family of appliances that deliver a broad set of capabilities to ease the network burdens and boost the business case for Web-enabled applications. With Redline's E|X 3250 enterprise application processor handling I/O processing, connection management, compression, load balancing and SSL processing, ChartOne customers and internal users are now experiencing the performance they require — and the company's IT group is realizing the administrative benefits that Web-enabled applications can bring.

ON THE WEB TRAIL

ChartOne's odyssey began in July of 2001, when the company began migrating its homegrown client/server enterprise applications to Peoplesoft 8, a Web-based ERP suite. "We were expecting growth of 20% to 30% a year, and we felt we needed a big ERP system," Svendblad says. In addition, thin, standardized browsers would require far less IT support than fat, homegrown clients.

If ChartOne was going to offer Web-based patient records management services, Svendblad also felt the company "should eat our own dog food" and use a Web-based application platform internally.

Webification proved to have its challenges, however. As more application modules and users moved onto the new infrastructure, response times slowed to a crawl. Employees at the company's 10 remote offices sometimes spent hours waiting for tickler screens that had taken minutes to display under the old client/server system. The 10- to 15-person offices had plenty of bandwidth, IT staffers knew: In anticipation of the migration to Peoplesoft 8, they'd deployed T1 links to each site.

Users on the corporate LAN were also having difficulties. By far, the worst off was the accounts receivable department, which processes more than 300,000 transactions per month. Productivity had dropped by 20% because of response time degradation. "During peak usage periods, it was taking people minutes to go from screen to screen," Svendblad says.

ChartOne's Challenges

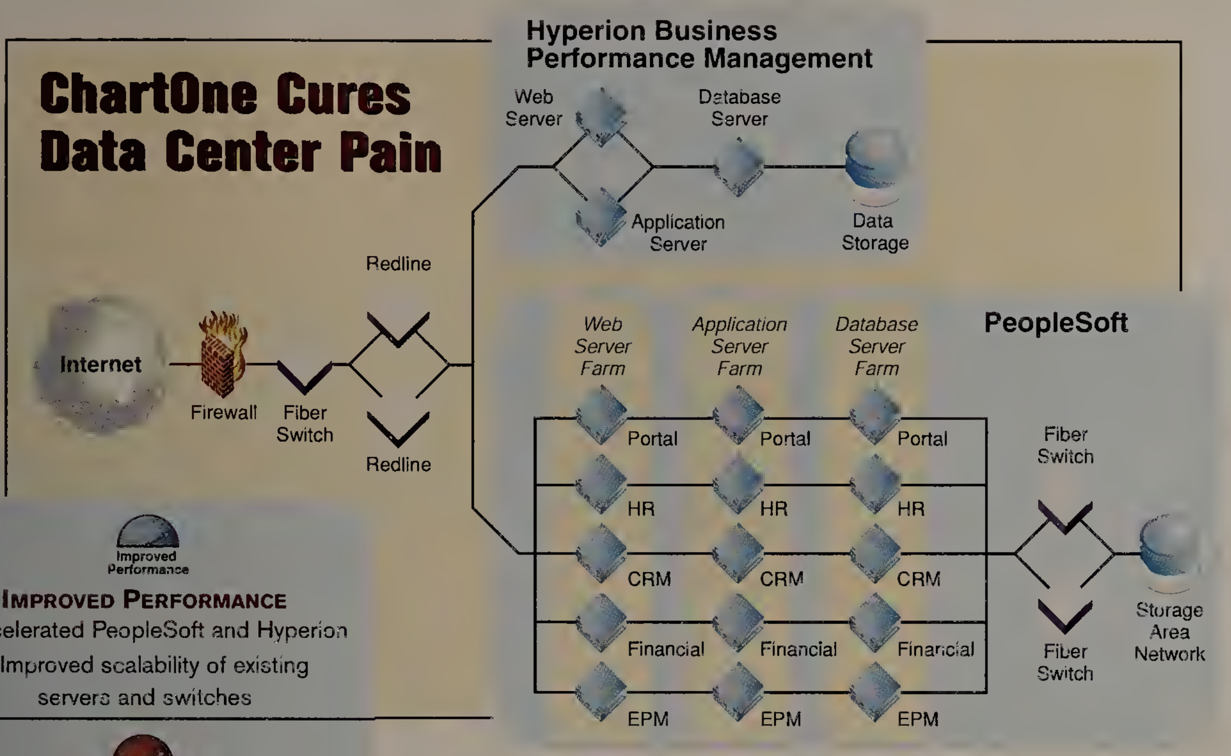
- Web-enabled enterprise applications were overloading servers.
- Server processors were at 80% to 90% utilization levels during peak traffic periods.
- Slow response time over corporate LAN was hurting user productivity.
- Remote users waited hours for screen downloads.

The Redline Networks Cure

- Average server CPU utilization during peak usage now between 10% and 15%.
- Response time returned to desirable levels for local and remote users.
- Remote sites no longer need terminal servers.
- Bandwidth consumption decreased approximately 70%.
- Savings of $200,000 by avoiding major hardware upgrades.

Produced by NetworkWorld CUSTOM MEDIA SOLUTIONS

ChartOne Cures Data Center Pain



Improved Performance
Accelerated PeopleSoft and Hyperion
Improved scalability of existing servers and switches

Higher Availability
Eliminated client-server in remote sites
Simplified network infrastructure

Easier Management
Reduced number of costly security certificates
Saved $200,000 in server upgrades

IN SEARCH OF A CURE

As user complaints mounted, the IT staff began looking for remedies. PeopleSoft and Oracle — ChartOne's application vendors — initially suggested fine-tuning their applications. "With a thin Web client, ERP systems involve complex querying in the background," Svendblad explains.

When tweaking back-end software produced little improvement, ChartOne tried upgrading its server hardware. It deployed another Sun 420R application server and storage box, then migrated the main financial server from a 420R to a more powerful SunFire server. "Performance improved slightly, but we were still looking at CPU usage in the high 80% to 90% range during peak processing time," Svendblad says. "And our phones were still ringing off the hook."

Pressed for answers, ChartOne even took the radical step of supplying remote offices and home workers with terminal servers. While that substantially improved response time, maintaining the devices offsite was a major burden on the IT support staff. "It was like we'd gone back to a client/server setup," Svendblad says, noting the setup also strained budgets and IT resources.

Meanwhile, Web and application servers were still maxing out during peak usage periods. A major upgrade seemed inevitable. "It looked like we needed a new [BEA Systems] WebLogic server, a new database server and a third server for finance," Svendblad says. His team priced out three SunFire servers on the second-hand market at about $50,000 apiece. He also budgeted $50,000 for a LAN upgrade, bringing the total budget hit to $200,000, which Svendblad calls a conservative estimate.

ONE VERY BRIEF PILOT

Just as he was about to swallow that bitter pill, a former colleague told Svendblad about Redline Networks in Campbell, Calif., and its family of appliances that help enterprises manage the network impact of Web-enabled applications and improve their business case.

In the summer of 2003, ChartOne deployed Redline's E|X 3250 enterprise application processor in front of its WebLogic servers. The Redline device took over complex scheduling of TCP requests and connection management chores for as many as 150 users, saving the Web servers' CPU and memory resources for other activities like page generation. The E|X also performed data compression to speed up server response and conserve bandwidth.

Svendblad's group started out with a pilot test within the accounts receivable group, which took the biggest performance hit after moving to Peoplesoft 8. Setting up users was simple and transparent, Svendblad reports: "I just changed the local DNS setting, and when users clicked on the PeopleSoft icon, they were routed through the Redline box. We didn't have to change anything on our existing architecture, or on the WebLogic or PeopleSoft servers."

User response was fast and dramatic. "People were asking us if we'd put some magic juice in their system," Svendblad reports. When word spread, end users not involved in the pilot "were pounding on our door saying, 'Whatever you did for her, do for me!'" It may have been the shortest pilot on record: A day after the test started, the company routed all the other users through the Redline box.

TALLYING THE BENEFITS

Once the bulk of users was online, the benefits of the Redline device really began to kick in, Svendblad reports. Average CPU consumption during peak processing time plummeted from 80% or more to less than 15%. Bandwidth consumption decreased approximately 70%.

The E|X 3250 now handles SSL encryption, as well. "We have security without burdening our servers with managing certificates or with SSL," Svendblad says. The company also saves money on SSL certificates, since it needs only one for the Redline box instead of one for each server.

Over the past year, ChartOne brought its customer relationship management, HR and Hyperion Business Performance Management applications behind the Redline box. Most recently, the company added its View Manager: Chart Management Suite of ASP offerings to the set of applications front-ended by the E|X platform.

> After ChartOne installed the Redline Networks E|X 3250, user response was dramatically faster. "People were asking us if we'd put some magic juice in their system," says Henry Svendblad, director of IT.

ChartOne's hundred-odd remote and mobile users have completely eliminated their terminal servers and use a standard Web browser to access all applications, via the E|X 3250. "The user experience is improved, and our support costs are lower," Svendblad says.

The bottom line: ChartOne successfully implemented a Web-enabled ERP platform with a "single box solution" that addresses critical Web tier issues while dramatically improving the business case by increasing user productivity and avoiding costly hardware upgrades. End users now experience the same response time levels and productivity they had with customized fat clients — but IT no longer has the support burden. Says Svendblad: "I think that's pretty impressive."

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>
> *–Laura DiDio, The Yankee Group, April 2004*
> *Linux, Unix, and Windows TCO Comparison*

The Yankee Group, a global research and consulting firm, concluded that a significant switch to Linux from Windows or Unix could cost three to four times as much without delivering tangibly better performance or business value. These findings are based on a non-sponsored worldwide survey of 1,000 IT administrators and C-level executives in midsized and large enterprises.

To get the full study, visit **microsoft.com/getthefacts**

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- WEB SERVICES

Short Takes

■ **Apple** last week released a security update that fixes several flaws in its **Mac OS X** operating system. **Security Update 2004-09-30** addresses potential denial-of-service vulnerabilities in the AFP server and CUPS printing module, and a flaw in QuickTime that could let malicious code execute as a buffer overrun. The patch fixes a CUPS flaw that could let user passwords be displayed in a printer log. Apple issued fixes for Mac OS X 10.2 Jaguar and Mac OS X 10.3 Panther. Some of the flaws affect both versions of Mac OS X, while others occur only in Panther. See www.nwfusion.com, DocFinder:4131, for details.

■ **SAP** and chip maker **Infineon Technologies** last week launched a software management system for connecting radio-frequency identification hardware and software from multiple vendors. The **RFID** package is based on SAP's NetWeaver integration and application server middleware, including the software vendor's Auto-ID Infrastructure and SAP Event Management applications, and on Infineon's You-R Open software, designed to connect readers, smart tags and other RFID devices with back-office software. The platform aims to help companies speed deployment of smart-tag systems and reduce the costs of managing hardware and software components from several suppliers. Infineon developed software designed to manage the interface between front-end RFID hardware devices and back-end software. SAP says its software will take the captured RFID data and "put it into business processes, allowing people to work with this information."

■ **Computer Associates** last week introduced a usage-based pricing and licensing option for its mainframe management software. All CA products for use with IBM's zSeries mainframes and the zOS operating system are now available on a pay-as-you-use basis. Usage is measured using IBM's Sub-Capacity Reporting Tool. Specific pricing was not announced.

BEA polishes Diamond platform

Management, always-on features on tap for WebLogic package.

■ **BY ANN BEDNARZ**

BEA Systems is readying the next version of its WebLogic platform, dubbed Diamond, which is aimed at helping companies more easily build and deploy a services-oriented architecture.

The Diamond suite — also referred to as WebLogic Version 9.0 — is due in beta form in January and expected to ship around mid-2005. The new platform will incorporate upgraded versions of BEA's core infrastructure software products, including its application server, integration software, portal and development runtime.

For example, WebLogic Server will gain uptime enhancements including the ability to upgrade or patch an application server without disrupting application server processes, says Vittorio Viarengo, vice president of product management and product strategy at BEA.

While SOAs and Web services can make it easier to tackle application integration, the technologies will bring new challenges, Viarengo says. "As companies move into SOAs, they will experience unprecedented requirements for uptime."

When application features are exposed as a service that other applications can utilize, the ramifications of a failure are compounded as more applications and users depend on those features, he says.

> **"As companies move into SOAs, they will experience unprecedented requirements for uptime."**
>
> **Vittorio Viarengo**
> Vice president of product management and product strategy, BEA Systems

Management requirements, too, become greater with SOAs, Viarengo says. As service-enabled applications proliferate, companies will need to maintain a registry of available services and manage associated governance issues, such as rules that govern which departments can use a service and which departments are responsible for funding service maintenance.

To address management requirements, BEA is adding Quicksilver to its WebLogic stack. This module combines traditional message brokering with Web services management features — two key aspects of SOAs, Viarengo says. "When we talk to customers, they don't talk about these problems in different buckets. They need to know what services are available, what the network load is, how services are performing and the security characteristics of those services. And they need to route and transform messages between systems. Quicksilver is like the traffic cop of a service-oriented architecture."

On the user front, the audience BEA is targeting is shifting to include a broader set of IT users. BEA in the past has been focused on serving developers, Viarengo says. "Now we're also paying attention to a new type of IT user, an administrator we

See Diamond, page 24

NetContinuum upgrades for Web services

■ **BY JOHN FONTANA**

NetContinuum is unveiling upgrades to its NC-1000 Application Security Gateway lineup with Web Services Edition that let users filter Web services messages based on the Simple Object Access Protocol.

Web Services Edition is designed to provide users with the ability to authenticate data, validate schema and check for malicious content that might be carried in Web services messages.

NetContinuum is expanding the range of its ASIC-based firewall appliance and casting it as a multifunction application-layer security device. The idea is to provide users with one device to tackle a majority of their application security needs.

In December, the company added a stateful-inspection firewall into the gateway with the idea that companies would not need a separate network firewall to run in front of their Web application firewall.

The same concept is behind the Web Services Edition, company officials say.

NetContinuum now offers a Web Services Edition of its NC-1000 Application Security Gateway appliance.

NetContinuum, which competes with KaVaDo, Sanctum and Teros, has licensed the XWall firewall from Forum Systems and is integrating it into the Web Security Gateway. Management and auditing functions also have been integrated into a single user interface.

"NetContinuum has been tracking the XML firewall gateway market," says Earl Perkins, an analyst with Meta Group. "They found Forum had the most compatible technology, and it looks like both the architecture and the engineering groups from both companies are compatible. It's another matter, however, to execute."

Perkins says corporations are warming up to Web services because they are satisfied with the development of standard security specifications, such as WS-Security and its family of protocols, and now are seeing those delivered in actual products.

With the addition of the Web services support, NetContinuum will add to its list of rivals companies such as DataPower, Reactivity and Westbridge Technology.

The gateway's Web service security features include masking the location of Web services on the network, XML schema validation, inspection and validation of SOAP envelopes, headers and message content, and data theft protection.

The gateway does its processing in an ASIC-based system on a proprietary operating system, while the management features execute on an x86 platform running a modified version of Linux in the same box.

The NC-1000 Application Security Gateway Web Services Edition is due in December and costs $39,000. ■

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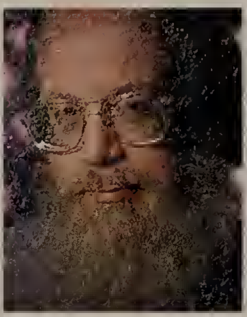
'NET INSIDER

Scott Bradner



Insecurity (or is that frustration?) at the top

A couple of months after getting a bad report card and a few days after one reorganization plan was stripped out of a U.S. House of Representatives security bill, the U.S. cybersecurity chief resigned from his job with one day's notice. He claimed it was because he had finished his work and hinted that another reason was a desire to spend more time with his family. But the Washington buzz is there is less to the story than that.

Anit Yoran was the third U.S. cybersecurity chief to resign in the past two years, starting with Richard Clarke, who was followed in resignation by Howard Schmidt. Both of Yoran's predecessors publicly expressed frustration that cybersecurity was getting far less emphasis in the minds of government officials than they felt it should. Reports that Yoran felt the same way have been circulating around Washington for the past few months.

The report of the Department of Homeland Security (DHS) inspector general (see www.nwfusion.com, DocFinder: 4130) didn't make Yoran feel all that good. Nor, I expect, did the removal — less than a week before he resigned — of a provision in a House security bill that would have moved the DHS cybersecurity effort to the U.S. Office of Management and Budget, where it might have gotten more resources. In what may be a rewriting of history, no one now admits that there was ever such a provision in spite of a number of believable reports at the time. Another effort, to raise the status of the cybersecurity chief within DHS, is still alive but may be dying.

The current cybersecurity effort is staffed by 60 people and has an annual budget of $70 million or so, but does not seem to be doing much that anyone can see, as the inspector general's report card pointed out.

It's hard for me to understand why so little is being done. Various reports put the annual loss caused by cybersecurity problems in the U.S. at tens of billions of dollars. Even in Washington I would think someone would notice numbers of this size. Note that this is a time of relative cyberpeace. I say cyberpeace because there doesn't seem to be much evidence that we are under a general attack by organized groups. The evidence seems to be that the big problems at this time are the result of cyberpunks trying to outdo each other, or from plain old capitalism where hackers are selling the use of networks of compromised computers to spammers or to people who want to order a denial-of-service attack on someone else. Things could get a lot worse if some anti-U.S. group or government decided to try to trash the U.S. cyberinfrastructure to make a political point.

I'm not quite sure what a good and effective U.S. government-led cybersecurity effort would do, but the way things are going there doesn't seem too much of a risk of finding out.

Disclaimer: Some of what Harvard does is seen as good, some effective, a little as both and some as none of the above, but this commentary is my own.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.

BMC rounds out mainframe database family

■ BY JAMES NICCOLAI

BMC Software has added IBM's IMS mainframe database to the platforms its SmartDBA family of products supports. This completes a two-year mission to provide tools for managing all major databases from one Web-based console.

SmartDBA System Administration for IMS, IBM's high-speed transaction processing database, is due for release next month and provides a tool for all the basic IMS database administration tasks, BMC says. The package joins similar BMC tools for both the mainframe and distributed versions of IBM's DB2 database, and tools for managing databases from Oracle, Microsoft and Sybase.

BMC launched an effort about two years ago to provide a console that could be used to manage several database types. With companies trying to minimize IT costs while juggling several database platforms, a console that provides a similar interface for managing them all could prove popular, says Richard Ptak, an analyst at Ptak, Noel & Associates.

"The costs of maintaining a collection of different databases spread around the enterprise with multiple tools are too high. Also, maintaining expertise in multiple different tools is inefficient and expensive," he says.

Competitors Computer Associates and IBM have been increasing their investments in mainframe management tools, he says. BMC's other chief competitor is Quest Software.

SmartDBA could be particularly useful when it comes to mainframe databases, Ptak says. These typically are managed through so-called green screen products, which work quite differently from the intuitive, graphical tools for managing more modern, relational databases such as Oracle 10g and Microsoft's SQL Server.

But fewer database administrators (DBA) are being trained in mainframe systems; only two universities in the U.S. still offer a full mainframe curriculum, according to Devon Shows, BMC director of strategic planning. "The current guys are more than happy to use BMC's tried and tested green screens. . . . But if you take an Oracle DBA and say 'We need to cross-train you on IMS and DB2,' these guys are used to GUI tools, Web apps and Windows. That's what they've grown up with," Shows says.

SmartDBA won't turn relational DBAs into mainframe experts overnight, Shows acknowledged, and BMC has tried to conceal some of the complexities of mainframe management from SmartDBA users, in part to reduce the chances that they could do harm.

"You've got a lot of rope there, and you have to make sure people don't hang themselves," he says.

SmartDBA System Administration for IMS is priced starting at $365,000 and is the first in a series of SmartDBA products planned for IMS databases. Products for performance management and data recovery will follow later in the year, BMC says.

Niccolai is a correspondent with the IDG News Service.

Diamond

continued from page 23

call the application configurator."

Customers want to be able to perform more tasks from a management console without having to turn to developers for code, he says. The application configurator is someone who understands what an application and services are designed to do, and can configure metadata to make changes to an application's behavior without having to redeploy the application.

For example, a WebLogic user could change message-routing rules to have a subset of purchase orders — such as all those pertaining to customers in Europe — routed to a new processing application without making any changes to the front-end e-commerce application.

Analysts advice caution

While BEA readies its new release, analysts caution the spending environment remains challenging.

Goldman Sachs, in its recent evaluation of the infrastructure software market, said Web services, SOAs and business services are beginning to be adopted. But customers want to ease into these technologies.

Competition is a formidable challenge for BEA, according to RBC Capital Markets Corporation. "BEA Systems faces constant, growing and at times intense competition from large platform vendors such as IBM, Fujitsu, Microsoft, Oracle, SAP and Sun as these companies look to encourage customers to commit to single-vendor architectures and advertise offers of similar functionality at heavily discounted pricing to encourage account lock-in," the firm wrote in a recent research note. ■

BEA's Diamond line-up

The next version of BEA's WebLogic Platform suite will feature upgrades to the vendor's central infrastructure software components.

Platform component	Enhancement
WebLogic Server	Core application server product will gain uptime enhancements, such as the ability to upgrade an application server without disrupting application server processes.
Quicksilver	New module will combine message brokering with Web services management features.
WebLogic Portal	BEA's portal technology will power the WebLogic management console to provide users with a unified management infrastructure.
WebLogic Integration	Software for constructing composite applications will support standards including Business Process Execution Language for Java, which links interactions between Java and Web services business processes.
WebLogic Workshop	BEA is offering its Workshop development tools in an opensource format through its Project Beehive effort.

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VPN service exploits multiple MPLS nets

Virtela offering guarantees quality of service across backbones.

■ **BY TIM GREENE**

Virtela this week is set to unveil a site-to-site VPN service that overcomes one of the biggest hurdles to creating far-flung Multiprotocol Label Switching networks: It guarantees classes of service across different carriers' backbones.

Called Multi-Carrier MPLS Service and available in 190 countries, Virtela's fully meshed offering exploits some 200 carriers' MPLS networks to carry customer traffic.

Matching such a service by getting carriers to sync up their MPLS networks would require a lot of effort by a customer and cost a lot of money, says Michael Suby, an analyst with Stratecast Partners.

With other network technologies such as frame relay and ATM, carriers follow network-to-network interface standards to preserve QoS among their networks, but no such standard exists yet for MPLS. Virtela has compiled a database of service levels that more than 200 carriers offer and mapped them to one another. So Virtela can take traffic from one carrier's network, assess its service quality and map that to the appropriate service quality of another carrier. Virtela supports four classes of service.

It performs this function at 25 regional policy centers in collocation facilities around the globe. Each center has trunks to at least three service providers in that region, and it can switch traffic among them. Virtela constantly monitors performance of these alternate backbone networks and shifts customer traffic on the fly if the performance of a network drops below requirements. Probes at customer sites and at regional policy centers send test traffic over the backbone providers' networks to measure performance.

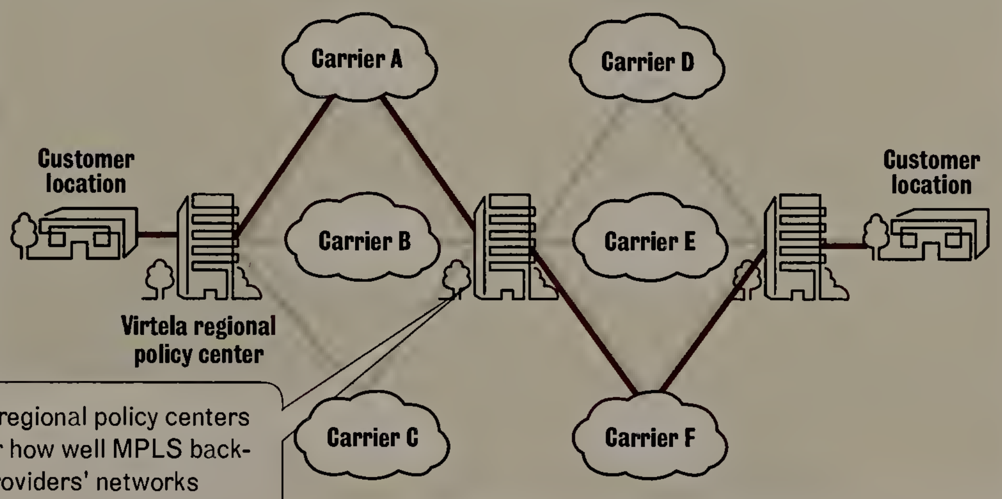
Customers deal only with Virtela to set up their networks and for billing and troubleshooting.

U.K. service provider Vanco offers a similar service but does not pick the optimal route from among multiple carriers, Suby says. Cable & Wireless also is working on MPLS alliances with other carriers to

See Virtela, page 26

Quality controller

Service provider Virtela creates MPLS links between customer sites using multiple carriers (in this case, carriers A and F) that are chosen because they can support the required quality of service.



Virtela regional policy centers monitor how well MPLS backbone providers' networks perform and map classes of service from one carrier to another to maintain service-level guarantees from site to site.

Short Takes

■ **Sprint** is exiting the wholesale dial-up Internet access business by selling it to **Level 3 Communications** for $34 million. The deal includes all of Sprint's wholesale customers, mainly service providers, and much of Sprint's dial-up infrastructure, including modem banks. Sprint also revealed it is now outsourcing all its dial-up Internet access network support to Level 3 in a separate deal. Sprint will continue to bill and offer customer support to its business dial-up customers, but all users are being migrated to Level 3's network. The acquisition boosts Level 3's growing dial-up Internet access network. The carrier has recently bought a handful of networks from service providers such as ICG and Genuity. Level 3 says the Sprint deal will allow it to reach smaller markets where it currently does not offer service.

■ Application service provider **Corio** last week upgraded its hosting platform for enterprise applications to offer customers the ability to automate common tasks and to test new or enhanced applications before deploying them. Applications on Demand 2005 lets administrators perform 20 common tasks — such as migrating an object or deleting a printer — from their desks, instead of having to submit a request to Corio, the company says. By avoiding the request process, customers can execute these tasks more quickly and economically, according to the company. The upgraded platform also offers testing suites to customers who don't have the infrastructure to effectively work the kinks out of a new program. These testing suites can be used and paid for on an as-needed basis. The new version also keeps customers up to date on compliance with federal regulations such as the Sarbanes-Oxley Act. Pricing for Corio services, which are based on a monthly rate and vary based on application, remain unchanged.

MCI getting a better handle on its VPN services

■ **BY DENISE PAPPALARDO**

MCI is deploying new technology that the company says will make it easier for the carrier to manage its IP VPN offerings and that should result in better customer service.

The carrier says it will spend at least $2 million on software from Voyence that it will use in part to improve its system for configuring and provisioning its IPSec-based IP VPN Dedicated services.

The VoyenceControl VPN Service Manager software will be used to support new MCI customer premises equipment (CPE)-based IP VPN shops as of December, but the carrier plans to migrate its other IP VPN Dedicated service users to the platform in the first quarter. The carrier also plans to extend the management system to its VPN Remote service, which is planned for next year.

"We've spent a lot of money automating our back-end processes in how we detect trouble, react and notify our customers," says Gene Clark, senior manager of product development at MCI. "We did this not only to control costs, but to improve quality of service."

Key to the new management platform is that it lets MCI manage a VPN service that supports CPE from "a long list of vendors," including Cisco, Lucent and Nortel, Clark says. Currently, MCI uses many element managers to support its IP VPN Direct service.

The system lets MCI network administrators drag and drop routers and add connections though a single interface. MCI has integrated the management system with its provisioning system so as soon as an order is placed a network design is created and entered into MCI's front-end system, Clark says. This will let MCI more quickly get new IP VPN customers up and running, he says. ■

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EYE ON THE CARRIERS

Johna Till Johnson

Feds are losing their balance on privacy

Two related events highlight the challenge of balancing telecom privacy with security.

On Sept. 29, a New York federal judge ruled unconstitutional Section 505 of the Patriot Act, which gives federal agents the ability to collect telephone and Internet records about customers without requiring judicial oversight and without telling the customers that their information is being disclosed.

In his ruling, Judge Victor Marrero found that Section 505 violates free speech rights under the First Amendment and the right to be free from unreasonable searches under the Fourth Amendment. On Oct. 1, the Department of Justice said it would appeal the ruling, arguing that Section 505 is necessary to protect against terrorists.

The American Civil Liberties Union, which brought the original case, says it is not.

I'm with them. Effective counter-terrorism actions can coexist with respect for civil rights. The FBI was able to operate for decades within the constraints of current wiretap laws (which require judicial approval) and still succeeded at breaking the back of organized crime in the 1980s.

Even if Section 505 expires, as it's set to do next year unless the Patriot Act is renewed, it's worth keeping a close eye on this issue as it wends its way through the courts. How it's decided will determine the shape of some critical civil rights in the 21st century.

Now for the second issue: On Aug. 9, the FCC issued a notice of proposed rule-making intimating that it plans to require ISPs and all facilities-based "broadband providers"— but not software-only services — that offer VoIP to implement wiretap-enabling technology under the 1994 Communications Assistance for Law Enforcement Act.

There are two big problems with this idea.

First is that the ruling — if it becomes final — would require facilities-based VoIP providers to offer built-in wiretapping capabilities, which can't feasibly be limited only to legal uses. Any mechanism that can be used by law enforcement can and will be used by hackers — there's simply no way to create an infrastructure that's hackable by X and not Y, as fellow *Network World* columnist Scott Bradner has pointed out numerous times. The net result is stripping VoIP users of any remaining vestige of privacy.

The kicker is this move isn't necessary. Like everyone else, ISPs already have to conform to lawful subpoenas and turn over any relevant information to law enforcement agencies.

The second problem is that it creates a tilted playing field. Providers that operate infrastructure will have to spend millions of dollars retrofitting their infrastructure. Providers that offer exactly the same services via a software-only solution will be exempt. Essentially, this disadvantages Verizon, Sprint and AT&T in favor of Vonage and Skype.

Now, I'm not going to cry for the telcos. But think about it: Who, exactly, is operating that Internet infrastructure across which Vonage and Skype offer services? Increasing the risk and expense of providing that infrastructure is in nobody's best interest. Push too hard, and the telcos will do the logical thing and stop offering public Internet facilities.

The FCC is accepting comments on this proposed rule until Nov. 8. Reach them at www.nwfusion.com, DocFinder: 4126.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

Virtela

continued from page 25

expand the territory its services can reach, he says.

Virtela already offered an IP VPN service based on this model of buying backbone connections from multiple carriers to create a network. This architecture let Virtela avoid building its own network and reach more locations than any single carrier's network can reach alone, Suby says.

It also gives the network built-in redundancy, so if one provider's network fails, Virtela can shift traffic to another, he says.

This model is attractive to other service providers. IBM, Singtel and Verio use Virtela to expand their service reach.

Pricing for Multi-Carrier MPLS is based on location and type of access line used. A site connected by a T-1 in the U.S. with four classes of service costs $995. The same service to a site in London costs $1,700 and in Singapore $1,700. This includes a managed router and monitoring. ■

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Special Focus

VIDEOCONFERENCING: Flat-rate pricing catches on.

Video users saying hello IP, goodbye ISDN

BY CAROLYN DUFFY MARSAN

Consider the difference between an all-you-can-eat buffet and a restaurant with an a la carte menu. That's what companies see when comparing the cost of IP-based videoconferencing services with traditional ISDN offerings.

ISPs charge a flat monthly fee for IP videoconferencing, and companies can use the service as much as they want. In contrast, customers pay by the minute for ISDN, which can be very expensive, especially overseas.

The cost savings of IP videoconferencing — along with better resolution and easier call setup — are encouraging more companies to switch from ISDN to IP.

ISPs say that pricing for IP video services can be anywhere from 30% to 50% less than for ISDN, depending on network configurations and locations of sites.

"We're saving 40% on our monthly bill, just for video," says Loc Nguyen, manager of IS infrastructure at National Semiconductor, a Santa Clara, Calif., chip manufacturer that migrated 15 videoconferencing sites in the U.S. from ISDN to IP this year. "We're running 30 to 50 videoconferences a week within the U.S.... Most of our calls are from headquarters out to the branch offices."

National Semiconductor plans to offer IP videoconferencing in five more of its U.S. locations before year-end. Meanwhile, the company's IT staff is trying to drive up usage of its IP video service, which is provided by AT&T.

"We're going to encourage employees to think of videoconferencing for any meeting," Nguyen says. "People still think of videoconferencing as too expensive internally."

National Semiconductor is not alone. Many corporations, including JT International and Zurich Financial Services, are starting to reap the financial rewards of deploying IP-based videoconferencing services. These companies are finding that the cost savings of IP video come not only from lower telecom bills but also from reduced travel costs and enhanced employee productivity.

"If you have to go to the U.S. for a meeting of four hours, it costs you three days," says Jan Wijbren Dijkstra, IT manager at Mammoet, a Dutch provider of heavy-lifting and transport solutions that in August began offering IP-based videoconferencing from Infonet at six corporate sites.

"What we really want to achieve is that all the main locations of our company automatically think of using videoconferencing if two or more people have to have a discussion," Dijkstra says. "This is especially important because our projects are getting bigger and are in more remote locations."

All top-tier ISPs offer IP-based videoconferencing services. Most are built upon Multi-protocol Label Switching (MPLS), which allows network managers to create a dedicated class of service for video applications.

With its dramatic cost savings, migrating from ISDN to IP seems like a no-brainer. In most countries, IP is anywhere from 30% to 50% less expensive and more reliable than ISDN. Users agree that IP videoconferences are easier to set up and troubleshoot than their ISDN counterparts. Additionally, IP video quality is better than ISDN's, offering as much as double the resolution.

So why do so many companies continue to use ISDN for videoconferencing? It's mostly inertia, industry observers say. Some companies aren't ready to upgrade their videoconferencing gear to support IP. Others find that it's easier to keep a legacy ISDN network running.

"Ten percent of our base [videoconferencing customers] have migrated over to IP," says Martha DeGraw, manager of Sprint's Collaboration Services Team. DeGraw expects that number to hit 20% by year-end.

Two of Sprint's largest customers of videoconferencing services show the market dynamics today. HQ Global Workplaces, a provider of furnished office suites in Dallas, uses a mix of IP and ISDN for its videoconferencing services. Meanwhile, Kinkos uses 100% ISDN.

"We have not been hugely successful in getting customers to get rid of ISDN," DeGraw admits. "They're not swapping it out; they're augmenting it with IP at new sites."

Companies that migrate from ISDN to IP for videoconferencing tend to do so gradually. They choose IP video when they move to IP-wired buildings, open new locations or need to replace aging ISDN equipment. Companies that already have IP VPNs find it relatively inexpensive to add video traffic across the same backbone.

"In the past 12 months, we've seen a 100% increase in the number of customers for our IP video services," says Jean-Matthieu Tilquin, head of real-time collaboration services at Equant.

Equant has attracted about 75 customers for its IP video service since it was introduced 18 months ago.

"When we see customers planning a full migration to an IP VPN, video is the last item they take care of," Tilquin says. "It often starts with IP telephony and when everything works with that, then they take care of video. That is why there is a slight delay between the time it takes for a customer to buy a network from us and to put the video traffic on that network."

One factor encouraging companies to stick with ISDN overseas is that in some countries the cost of IP services has not dropped enough to make migration worthwhile. That's what's happening at National Semiconductor, which is taking a hybrid approach to videoconferencing services. By year-end, National Semiconductor will migrate all 20 of its ISDN videoconferencing sites in the U.S. to IP. However, it will keep ISDN in 15 sites overseas.

"The reason why we haven't deployed it internationally is because of the cost of the IP network overseas," Nguyen says. "We are maintaining ISDN for international [videoconference calls] right now, but we have had some discussions with AT&T about using their MPLS technology globally.... I think that's about a year away."

National Semiconductor can operate a hybrid network because last year the company upgraded all its videoconferencing sites to equipment from Tandberg that supports both IP and ISDN.

Unlike many IP videoconferencing users, National Semiconductor is operating a separate video network that is of hybrid IP/ISDN design instead of using a converged backbone.

"We keep it separate because of the quality of service. We don't want [video] to compete with other kinds of traffic," Nguyen says.

Some ISPs, including Infonet and Sprint, resell videoconferencing equipment from manufacturers such as Polycom and Tandberg.

These service providers will install, integrate and manage the videoconferencing equipment at the customer's site along with all the required customer premises equipment, routers and backbone network service.

Buying videoconferencing equipment from an ISP helps reduce the interoperability problems that can crop up when installing gear in far-flung locations. ISPs often have preferred platforms that they've already tested for compatibility.

One company that didn't go this route and regrets that choice is Mammoet. Mammoet migrated to Infonet's videoconferencing service Aug. 1, and it has run into interoperability problems using equipment that it bought and installed itself.

"One of our offices in Canada is perfect with both the sound and vision," Dijkstra says. "The other one has perfect sound but not vision. We've been in close contact with Infonet to fine-tune the service."

Mammoet is new to videoconferencing. The company migrated from a frame-relay network purchased from MCI to an IP VPN from Infonet this summer. Since then, Mammoet has migrated six offices around the world to Infonet's service and will migrate two more by year-end.

Mammoet is using two configurations for its videoconferencing gear: one for boardrooms and the other on a cart that can be rolled into conference rooms. If he had to do it all again, Dijkstra says he would have bought the videoconferencing gear from Infonet.

"If you're really into videoconferencing, choose a service provider that also provides equipment and everything around it. That way you're assured from Day One that everything is tuned," Dijkstra says. ■

Coming soon

ISPs are planning enhancements to their IP video services:

- **Equant** is set to announce this fall a desktop videoconferencing solution that it will install and support. Equant also is scheduled to announce support for the H.264 protocol, which offers enhanced video coding.
- **Infonet** is scheduled to announce in the first quarter of next year several enhancements to its IP conferencing services, including video call management and support for e164 addresses, which translate between the DNS and standard telephony systems. Infonet also says it will offer a gateway service for off-network calls and a scheduled bridge service to support a mix of IP and ISDN calls.
- **AT&T** says it plans announcements early next year of products designed to make desktop videoconferencing easier to use and to provide more features for end users.
- **Sprint** says it is working on adding video to its Session Initiation Protocol-based services and offering point-to-point videoconferencing over wireless connections.

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■ PRODUCTS, SERVICES AND STRATEGIES
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Linksys springs wireless, voice gear

■ BY STEPHEN LAWSON
AND TONI KISTNER

At its Home Networking Event in San Francisco, Linksys unveiled new 802.11g/a wireless LAN equipment and an 802.11g wireless video camera. The company also announced a deal in which Verizon would provide Cisco/Linksys VoIP adapters to customers of its VoiceWing broadband telephony service.

Linksys sees 802.11a as the emerging home Wi-Fi technology as consumers begin using more demanding entertainment applications, such as streaming music and movies, Linksys President Charlie Giancarlo said at the event. 802.11a has been used almost exclusively in corporations, in part because of the relatively high cost of dual radios for networks that support both 802.11a and other Wi-Fi specifications.

Now some consumer electronics vendors, such as Sony, are aiming at 802.11a for their coming wireless entertainment devices. Both its speed and its relatively "clean" spectrum band make it ideal for entertainment uses. Like 802.11g, 802.11a offers a theoretical maximum carrying capacity of 54M bit/sec, compared with 11M bit/sec for the earlier, widely deployed 802.11b technology.

The Dual-Band Wireless A+G Broadband Router is geared toward homes that rely on the network for work and entertainment.

Linksys' 802.11a/g products will ship next month starting at $89 for a PC Card or PCI adapter. A USB adapter will cost $99, a router $109. The PC Card and PCI adapter include Wi-Fi Protected Access security, and all devices will work with older 802.11b equipment.

Under the Verizon deal, the carrier will provide a Linksys PAP2 (Phone Adapter with 2 Phone Ports) free to VoiceWing customers. The PAP2 is an analog telephony adapter (ATA) with one Ethernet port for connection to a broadband router and a pair of phone ports for simultaneously using two phones for VoIP (or a phone and a fax). Since Verizon introduced VoiceWing in July, it has been providing customers with the older Cisco ATA 186, according to Michelle Swittenberg, executive director of consumer VoIP at Verizon.

The PAP2 offers more features than the Cisco product, including the ability to add a second line and assign different ring tones for different callers. Swittenberg would not discuss adapter products from other vendors but said the deal with Linksys is not exclusive. Consumers only can get the PAP2 directly from Verizon, after signing up for the VoiceWing service. Verizon DSL customers will pay $29.95 per month; non-DSL customers will pay $34.95. The equipment will cost $50 to $100 depending on whether the customer has a router.

Verizon says it hopes to sell a Linksys adapter that combines the ATA function with a router through retail channels in the future. At this stage in VoIP use, most customers are early adopters who have routers at home, Swittenberg says.

Cisco might bring Wi-Fi and consumer VoIP together soon. Cisco already has a Wi-Fi phone for businesses. "The real issue with getting it to the home is just getting the price to the right level," along with ruggedness and ease of use, Giancarlo said, and he expects to see the first Wi-Fi VoIP phones in homes in the next 12 months.

The Linksys Wireless-G Internet Video Camera uses 802.11g, an upgrade from its earlier 802.11b camera with more bandwidth, and an LCD to help consumers set up and use the product. It costs $200. The Linksys division saw great success in Cisco's most recent fiscal year, which ended in July, and has even taught the parent company some lessons, according to Giancarlo, who in addition to his Linksys title is Cisco's CTO.

So far, Cisco has adopted elements of Linksys' low-cost manufacturing model, taking advantage of Asian manufacturing, in product lines for small and midsize businesses. In particular, this approach has helped cut costs on 800 Series routers and on stackable switches such as the Catalyst 2950 Series, Giancarlo said.

However, in many cases Cisco won't be able to emulate Linksys's agility in developing and releasing new products, he said. Whereas Linksys quickly can roll out new products for niche markets of early adopters, each new Cisco enterprise product needs to be able to work in a variety of network environments worldwide. One strong region for Linksys in the fiscal year was Europe, Giancarlo said. Sales roughly tripled there as Linksys entered a fragmented market with still limited use of home networks.

The new Dual-Band Wireless A+G Notebook Adapter 1.1 uses 802.11g for data and 802.11a for video and voice.

European homes are less likely to have a second PC or a notebook, both of which tend to drive adoption of WLANs. However, European broadband service providers are starting to push Wi-Fi as a tool for separating the PC from the physical broadband connection. Many older homes in Europe have a limited number of phone jacks, and consumers don't want to have to keep their computers in that part of the home.

Lawson is a correspondent with the IDG News Service.

Higher 802.11g bandwidth means the Wireless-G Internet Video Camera will yield smoother images, especially those in active motion.

Short Takes

■ **IBM** announced a **ThinkPad** with an integrated fingerprint reader. Sitting on the wrist rest below the arrow keys, the reader integrates with IBM's Embedded Security Subsystem, which includes a security chip and password manager. The reader and password manager work together to allow fingerprint identification and complex passphrases to be used interchangeably or in combination. The ThinkPad T42 notebook with fingerprint reader (a $50 option) starts at $1,700.

■ Start-up **Sproqit Technologies** announced **Sproqit Personal Edition,** an Outlook companion that lets users access their desktop PCs, applications and data from a handheld device via a direct real-time 128-bit SSL connection. Sproqit lets users access network resources, send and receive attachments, and access Outlook calendar, tasks and notes. It also works when the connection is terminated. Available this month, Sproqit works with Windows XP, ME, NT SP5 and 98 SE desktops, and with Palm Tungsten W, Treo 600, Pocket PC 2000, 2002 and 2003 devices. Pricing starts at $8.95 per month.

■ A group of communities across the country recently established the non-profit organization **Fiber Optic Communities of the United States.** With 128 fiber communities in the U.S., as of April 2004, according to market research firm Render, Vanderslice and Associates, FOCUS aims to educate consumers on the life-enhancing benefits of optical access networks, specifically telework, distance learning, and telemedicine and health applications.

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Technology Update

AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

RF fingerprinting pinpoints location

BY ALAN COHEN

Pinpointing wireless clients makes it easier to secure and manage wireless LANs. However, traditional technologies used for indoor 802.11 location tracking come up short on accuracy.

WLANs typically have used closest access point (closest AP) or triangulation technologies to track location. A third technology, radio frequency (RF) fingerprinting, uses intelligent algorithms to improve the accuracy of these previous technologies — locating 802.11 devices to within a few yards. Each of these technologies is typically implemented through a stand-alone WLAN management system that collects and processes real-time information gathered by WLAN infrastructure components, which include access points and centralized WLAN controllers.

With closest AP, an IT administrator submits a query to a WLAN management system to find a client based on its media access control address. The WLAN management system checks all access points to see where the device is associated. Because an 802.11b/g access point has roughly a 100-by-100-foot coverage area, locating the client by the closest AP method tracks it to within a 10,000-square-foot area, or the space of about 100 cubicles in a building.

With triangulation, IT administrators use a WLAN management system to query all access points on a wireless network to see which ones "hear" the target user's 802.11 signal. Access points that hear the desired device respond to the WLAN management system with their Received Signal Strength Indicator (RSSI) information. The WLAN management system then draws coverage circles around each of these access points, with each circle reflecting the border of the signal strength at which the access point received the signal from the user/device. The point where these circles converge is assumed to be the location of the desired device.

RF fingerprinting improves on the other location-tracking approaches by taking into account the effects that a building or people will have on an RF signal — characteristics such as reflection, attenuation and multi-path. This makes wireless device location tracking more detailed, precise and reliable.

Access points use RF fingerprinting technology to collect information pertaining to RF topology via a site survey, which creates a grid identifying how every part of a building floor plan looks to all access points. A grid point can be as small as a half-foot. To determine the radio frequency at each grid point, a WLAN management system must first predict how the RF will interact with the building.

The WLAN management system then creates an RF fingerprint with detailed topology information and RF data by tracing rays from every access point in the network and accounting for reflection and multi-path to any given destination. The RF prediction involved in RF fingerprinting takes into account the attenuation and reflection off walls and other objects into a building. The WLAN management system then creates a database of coordinates, recording how each access point views that area from a signal strength perspective — creating an RF fingerprint for each coordinate.

Next, the WLAN management system cross-references real-time client information collected by access points (for example, RSSI) with RF topology information stored in the system for accurate location tracking. This information is constantly updated to account for changes in the RF environment.

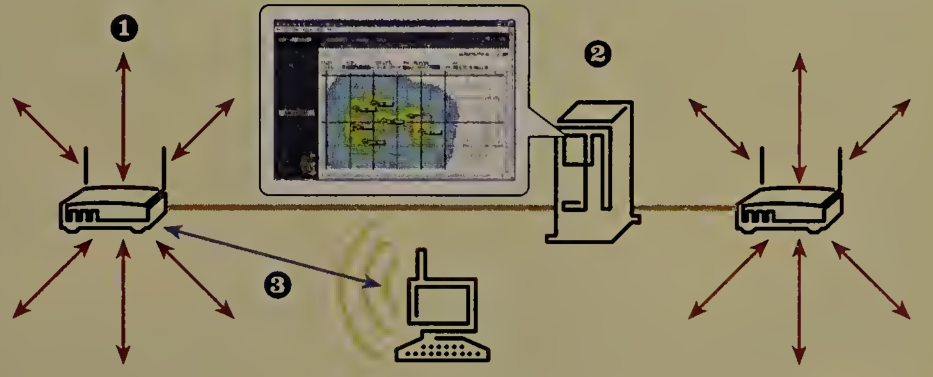
Accurate location-tracking technology helps support a range of wireless applications, such as E911 for tracking voice over wireless phones and wireless asset management. RF fingerprinting lets network administrators locate clients and assets in a timely manner, establish access control policies that are based on geographic location and identify the source of rogue access points, among other benefits.

Cohen is vice president of product management for Airespace. He can be reached at alan@airespace.com.

HOW IT WORKS

RF fingerprinting

RF fingerprinting takes into account RF characteristics such as attenuation, reflection and multi-path to locate 802.11 wireless devices to within a few yards.



❶ Access points collect information pertaining to RF topology by performing a site survey.

❷ Wireless management system creates an RF fingerprint with detailed topology information and RF data.

❸ Wireless management system cross-references real-time client information collected by the access points with RF topology information stored in the system for accurate location tracking.

Got great ideas

Network World is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).

Ask Dr. Internet

By Steve Blass

If we publish online forms with Microsoft's InfoPath, can people with the Mozilla browser use the forms? How difficult is it to publish InfoPath forms to a Web server so they can be used online?

Microsoft InfoPath is part of Office 2003, so people who will use your forms will need to have Office 2003 with InfoPath. When InfoPath is on a user's computer, Mozilla should be able to open InfoPath as the helper application when the user opens an InfoPath form. Publishing forms to a Web server can be as easy as clicking the Publish button in InfoPath if the Web server has the Front Page extensions installed, or can be reached through Windows networking. When designing a form, decide whether to tie the form to a data source, such as an MS-SQL database. InfoPath will refuse to connect to MySQL and other databases, even if you try to front-end them with Access using Open Database Connectivity. If you tie the form to a database data source, make sure the appropriate access permissions are in place to let the form submission data be delivered to the database. In any case, an XML file containing the submission is stored to the Web server location of the original InfoPath form.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

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GEARHEAD
INSIDE THE NETWORK MACHINE

Mark Gibbs

Snip it with Net Snippets

Like all longtime professional users of the Web, we have been struggling to organize all the material we find online. Every excursion onto the Web leads us to yet more interesting stuff we want to keep for later perusal.

Of course the stuff for later perusal is often far removed from the stuff we first went looking for. This is an easy trap to fall into when you head out looking for information on, say, the obscure internals of Microsoft Outlook and stumble upon a Web site that describes a bizarre struggle between a 13-inch *Liposarcus pardalis* and a three-inch *Pomacea canaliculata* (www.nwfusion.com, DocFinder: 4128).

So how can you collect, organize and share all this flotsam and jetsam that might one day become crucial decision-making data should we find our *plecostomus* trying to eat our albino mystery snail?

We've tried many products for collecting and managing the results of Web research. Some were fairly impressive, but we just got our hands on a new product that is outstanding: Net Snippets from Net Snippets.

Net Snippets can help you save and catalog not just whole Web pages but also "snippets," which can be the Windows Clipboard; the current page selection as text; all text, images or links on the current page; specific frames within the current page; a link to the current page; a screen capture; an e-mail message; a Microsoft Word file; ...pretty much anything stored on your PC.

The screen-capture feature is pretty sophisticated, letting you capture areas that are rectangular, rectangular with rounded edges, elliptical, triangular, parallelogramular or even completely irregular shapes. What is really useful about the screen-capture feature is that you can capture any part of the PC's screen rather than just the image within the browser window.

Along with the captured content, Net Snippets records the details of the source, and date and time of capture. You can save snippets to folders and assign an "importance," keywords, attributes (creator's name, e-mail address, etc.) and an abstract for each snippet.

Net Snippets can be configured as an Internet Explorer Explorer bar (that's the optional display region on the left side of the browser window), as a floating toolbar outside Explorer or as a "drop zone" in the Windows Start bar. In the last two forms you can add items such as messages from Outlook and Outlook Express or files from Internet Explorer to your snippets collection. There's even a plug-in for Word to select and insert snippets into documents.

The options for organizing snippets include moving them to folders; creating reports, an index or a bibliography on individual snippets, or the snippets in one or more folders; searching your snippets collection; or preparing a selection of snippets for delivery.

The delivery feature is where Net Snippets really breaks from the competitive pack because it lets you easily share your research with other people.

You select one or more snippets to send to another user by e-mail. If that user has Net Snippets installed, you can send the snippets in their native format or compressed in a ZIP file. If the recipient is not using Net Snippets you can send the snippets as HTML files in a self-unpacking executable or a ZIP file.

Note that the Net Snippets native format consists of two files: a copy of the saved content and a file containing an XML description of the content (this could be an interesting opportunity to integrate research done with Net Snippets into other information management systems).

Net Snippets also offers the Net Snippets Collaboration Server, which acts as a central repository for snippets. The company says it soon will release a hosted server version with additional features.

We particularly like that Net Snippets is more ambitious than competing products. Not only does it integrate a wider range of information sources, but it also provides more options for transforming that content into usable forms and documenting the content's context. Add to that the sharing feature and you have the most-sophisticated Web research tool available.

Net Snippets comes in three versions: Standard, which excludes advanced features such as collaboration; Professional, which adds reporting and management capabilities; and the Enterprise version, which consists of the Professional version bundled with the Collaboration Server.

Single-user licenses for Net Snippets Standard are $80, and the Professional version costs $130. The price of the Enterprise version depends on application.

Send your snippets to gearhead@gibbs.com.

Cool Tools

Quick takes on high-tech toys

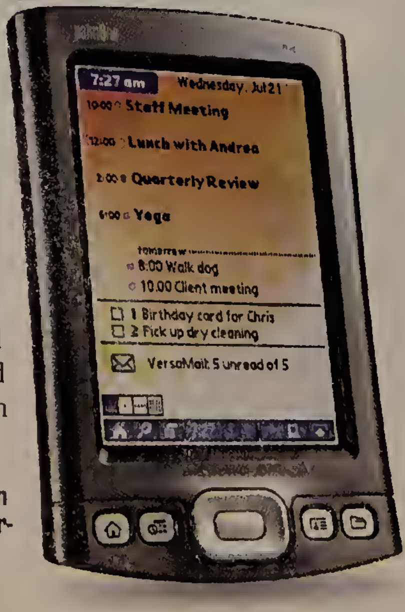
By Keith Shaw

PalmOne launches 256M-byte PDA

PalmOne last week unveiled the Tungsten T5, the company's latest handheld computer. The device includes 256M bytes of memory (215M bytes available to users), giving it one of the largest storage capacities in the handheld market.

What intrigues us most is that the device can act like a portable storage system. When users put the device into "drive mode" they can turn the PDA into a portable hard drive. Connecting to a PC via USB cable, they can drag and drop files to the PDA as if they were using a USB flash drive. This makes file transfer between the PDA and the PC simpler than it was with the synchronization software formerly used.

Tungsten T5 is powered by a 416-MHz Intel xScale processor, and has integrated Bluetooth (which can provide wireless Internet connectivity through a Bluetooth-enabled cell phone) and a 320-by-480-pixel transflective TFT color display (more than 65,000 colors), and a Secure Digital I/O card slot, which supports MultiMedia Cards. Tungsten T5 is scheduled to be available next month, priced at about $400.



PalmOne's Tungsten T5 can double as a 256M-byte storage drive.

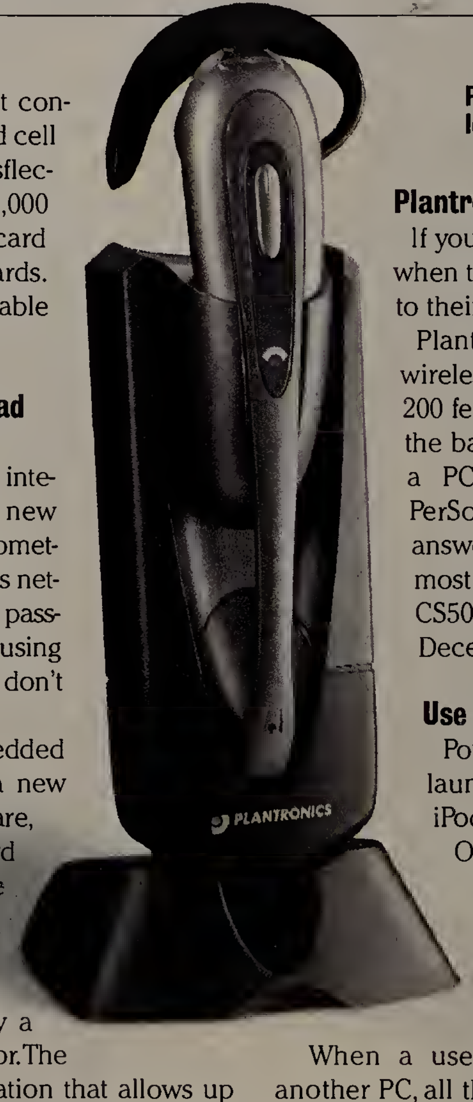
IBM adds finger scanner to ThinkPad notebook

IBM last week said it has added an integrated fingerprint reader to its new ThinkPad T42 notebook, providing biometric security for handling events such as network logon. The system also can store passwords for applications and Web sites, using the fingerprint authentication so users don't have to remember them.

In addition, IBM upgraded its Embedded Security Subsystem (ESS) through a new version of its Client Security Software, which includes a new Password Manager application. The ESS can be pre-loaded onto the machine at the time of purchase, IBM says.

The T42 is just 1-inch thick and weighs 4.5 pounds. It is powered by a 1.8-GHz Intel Pentium 745 M processor. The unit includes IBM's battery configuration that allows up to 7.5 hours of battery life (with a nine-cell extended battery). Wireless configuration includes 802.11b/g, 802.11a/b/g and Bluetooth. All the T42 models come standard with a modem, infrared and Gigabit Ethernet port for other connectivity options.

The T42 is scheduled to be available Oct. 19 through the IBM Web site — models with the fingerprint scanner are priced starting at about $1,700.



Plantronics' CS50-USB headset lets VoIP users go mobile.

Plantronics offers USB wireless headset

If you have employees using VoIP softphones when they travel, chances are they are tethered to their PCs by a corded headset.

Plantronics wants to change that with its wireless CS50-USB headset, which offers up to 200 feet of coverage between the headset and the base station. The base station connects to a PC's USB port. The headset includes PerSonoCall software, which provides answer/end and ring-detection features for most major softphones, Plantronics says. The CS50-USB is scheduled to be available in December and will cost about $300.

Use your iPod instead of a laptop

PowerHouse Technologies last week launched software that can turn the Apple iPod into a system that can save Microsoft Outlook e-mail, calendar and contacts, Internet Explorer favorites, browsing history and other data files (including presentations). Migo Personal for iPod software will cost about $100 and is set to be available next month.

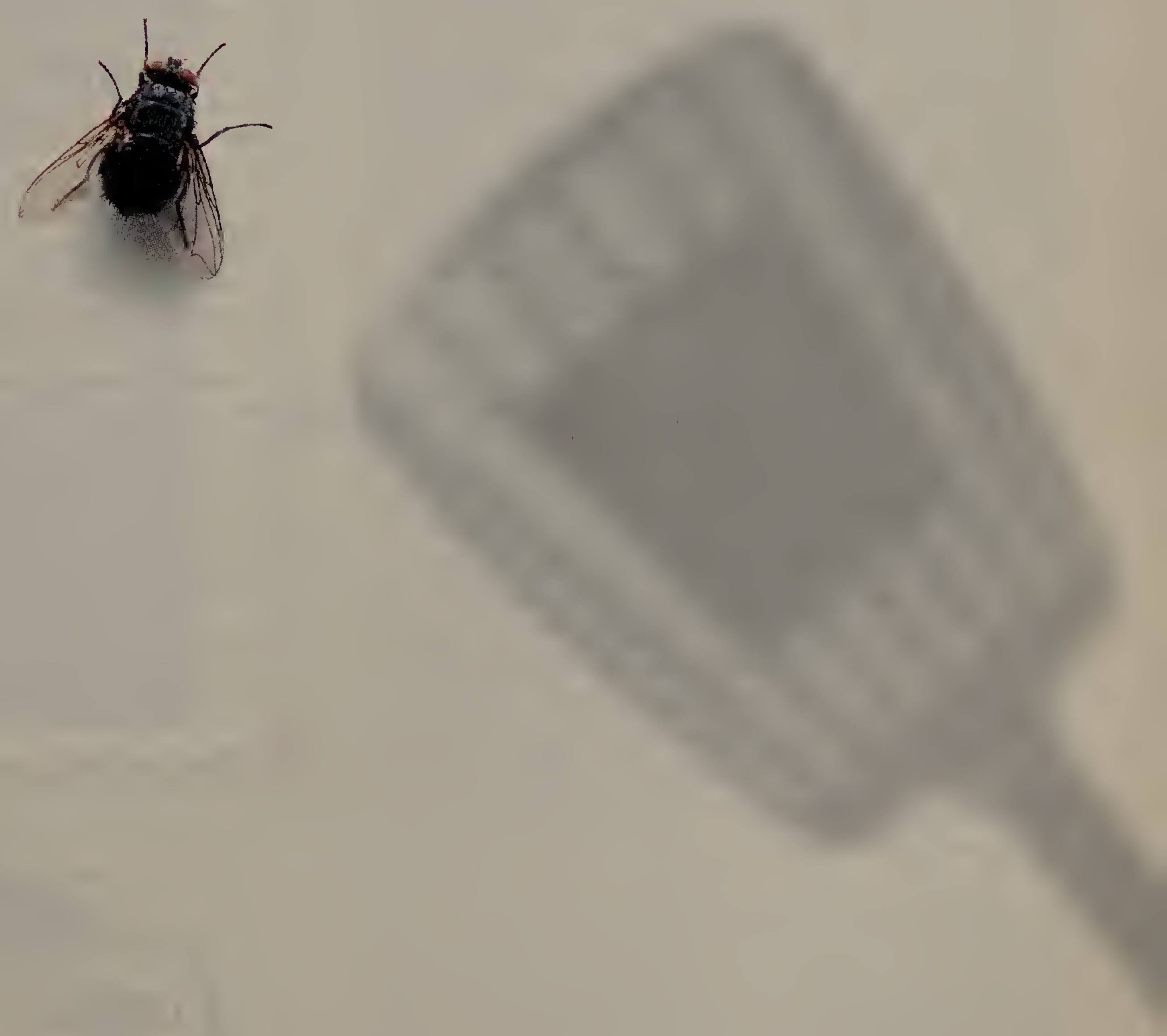
When a user plugs a Migo-equipped iPod into another PC, all the stored data (such as contacts, desktop wallpaper and Internet favorites) gets transferred to the new PC in a virtual copy of the data on the original PC. The end user then can use the new PC as if it were his original system, eliminating the need to bring a laptop on a business trip.

For more details, go to www.4migo.com.

Shaw can be reached at kshaw@nww.com.

Chances are you won't get fired for buying an IPSec or SSL VPN.

Here's why you should be.



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ON TECHNOLOGY

John Dix

Doing the compliance two-step

If your company hasn't yet installed a chief compliance officer chances are good they will: 1) do so soon; or 2) leave these responsibilities in your lap.

Given that IT plays a big role in compliance, either way you're stuck playing a large role in helping ensure your company can live up to stringent business regulations.

And while compliance officers — who can command salaries of $250,000 and more — typically herald from financial or legal backgrounds, the fact that these efforts rely heavily on IT means some of you might be able to parlay your expertise into this new role. (See www.nwfusion.com, DocFinder: 4132, for a job description. Even though this one is for healthcare, the basic requirements are likely to be universal.)

Not that you would necessarily want this job. Complying with the likes of the Gramm-Leach-Bliley Act and Sarbanes-Oxley — say nothing of industry specific regulations such as the Health Insurance Portability and Accountability Act — is a huge and daunting undertaking.

"My main concentration for the past 18 months has been IT security audits to ensure compliance with Sarbanes-Oxley Section 404 [management assessment of internal controls] and COBIT," which are security and control practices issued by the IT Governance Institute, says Michael Kamens, global network/security manager for $2 billion Thermo Electron (see our interview, at DocFinder: 4133).

The bulk of the new regulations that require IT support revolve around governance (being able to demonstrate that business processes meet standards) and security/privacy (safeguarding organization assets and sensitive data).

Whether you are handed the job or are just left holding the compliance bag, one of the first objectives is to align your IT and compliance strategies. That is easier said than done, but the good news is that, while IT budgets tend to be fixed, there are often compliance funds that can be called on that might make it possible to kill two birds with one stone.

In fact, many IT executives are using compliance monies for IT investments. And why not? If you can solve a pressing compliance need while at the same time installing technology that advances the business cause, it is a classic win-win.

No matter where you find yourself on the compliance continuum, network executives say a good source of advice is industry peers. Sharing experiences can save heartache.

One overheard tip: If you can't achieve absolute compliance, you at least want to be able to demonstrate that you consistently follow a set of defensible practices.

— John Dix
Editor in chief
jdix@nww.com

opinions!

The middle ground

Regarding whether site surveys are still needed in wireless LAN deployments (www.nwfusion.com, DocFinder: 4122): The answer is somewhere in the middle. For most small businesses, a site survey makes no sense. If you run a standard business office that occupies one floor of a building, some simple looking around as you place your access points will let you determine whether you need to compensate for wireless network gear placed by other tenants that may interfere with yours. Tools such as Berkeley Varitronics Systems' Yellowjacket or AirMagnet's AirMagnet, both of which cost less than $3,000, need to be purchased so you can check for problems later (such as a neighboring office installing a new wireless network). In environments with special requirements (especially radio requirements), such as airports, manufacturing (for example, car assembly lines with microwave ovens for drying paint) and so forth, a site survey is invaluable. So site surveys are not always needed, but a capability to check the radio environment for changes (via appropriate tools) is needed.

Brian Seborg
Crofton, Md.

Michael Hong's "best" worse-case scenario (nonfunctional wireless VoIP devices in a hospital) points to a common fallacy among virtually all IS/IT staff and vendors: the hospital environment is no different than a business office environment. In many respects, the electromagnetic environment of a modern hospital is not unlike that of an aircraft carrier. Wireless VoIP is the least of my worries; I just want my medical devices to function properly.

Yes, in most cases, such as a business office where the worst thing that can happen is someone's e-mail runs slowly or their wireless VoIP phone breaks up occasionally, there isn't much need for a site survey. But in areas where life-critical or safety-critical applications are running, the standard IS/IT version of a site survey doesn't even come close.

Rick Hampton
Boston

Crossing the DMZ

Regarding your Dual-WAN routers test (DocFinder: 4123): In the section on Zyxel's ZyWall 70, the story says: "You can set up a DMZ, but there is no separate Ethernet port for it. IP addresses separate traffic for each DMZ system." In reality, the ZyWall 70 has four switch ports clearly marked for DMZ. IP addresses alone do not separate the security zones. DMZ is a physical zone that is isolated from LAN and WAN ports.

The story also says: "The ZyWall 70 let us specify the WAN1 port for all outgoing SMTP traffic but required the use of console commands outside the regular management interface." I can easily set up policy routes for SMTP server from the Web interface. There is no need to go to a telnet or console interface.

Finally, the story says: "But forcing traffic, such as SMTP, to a particular WAN port required console commands via telnet." Again, this is not the experience I have had. Look at policy routes in Web configuration.

Tolunay Orkun
Independent consultant
Round Rock, Texas

James Gaskin, test author, replies: The first DMZ mention came out clumsily as I tried to say users must specify IP addresses for DMZ port usage. I say a few sentences later there are four DMZ ports. I could not get the SMTP routing to work reliably using the management interface settings. Zyxel technical support told me to use the command line.

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

More online! **www.nwfusion.com** Find out what readers are saying about these and other topics. **DocFinder: 4121**

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INTRANET ADVISER

Daniel Blum

Federated identity gets a boost

No matter how the November elections turn out, Cabinet changes and other reorganizations are inevitable. I just hope the Federal E-Authentication Initiative doesn't get lost in the shuffle.

E-Authentication is one of 25 e-gov services intended to improve interfaces between citizens, businesses and government. It also is the first component of the Federal Enterprise Architecture.

As I've discussed in previous columns, the future of identity management is federated. By specifying the standard identity assertion formats, federation lets autonomous security domains cooperate in providing single sign-on and other services for users. Organizations from many industries are adopting this approach on small-scale projects, yet analysts generally agree that we as an industry must overcome hard interoperability and trust issues to achieve federation's full potential.

E-Authentication is the government's take on federation. The interagency team that runs the initiative got the federated identity religion last October. Just a year later, they have six active pilots, seven approved products, multiple approved credential providers and a green light to go into production this month.

How are they doing it? They're working the interoperability and trust issues that any large federation must overcome. E-Authentication standardizes four levels of authentication assurance, assessment guidelines and processes for each assurance level, and procedures for using Security Assertion Markup Language (SAML) and public-key infrastructure between credential service providers and agency applications.

Because SAML is young, the General Services Administration (GSA) set up an Interoperability Lab to test among seven products. Check out the vendor listing at www.nwfusion.com, DocFinder: 4124.

Impressive as the E-Authentication Initiative's progress has been to date, much remains to be done. Success requires that most or all federal agencies sign up and bring additional applications to the table. Because the Government Paperwork Elimination Act requires that thousands of government applications support electronic forms submission, and most of these forms require authentication, the opportunities are legion. But it's always tough to get everyone in the government to move in the same direction, especially in an election year.

Gaining state, bank, corporate and other credentials services to enable seamless user logon to government services is the harder challenge. To address this, the GSA participates in the Electronic Authentication Partnership (EAP). EAP is a government/industry collaboration that plans to enable federation using common trust guidelines and rules; that is, without requiring bilateral agreements.

By testing federation products for interoperability and supporting the EAP, the E-Authentication Initiative is having a positive impact on federated identity adoption. If E-Authentication is broadly adopted by federal agencies in production federations, it will spur the formation of multiple federated communities. Together with the EAP, Liberty Alliance and other initiatives, E-Authentication could help usher in dynamic federation for the industry as a whole.

Blum is senior vice president and research director with Burton Group, an integrated research, consulting and advisory service. He can be reached at djb-feedback@earthlink.com.

Success requires that most or all federal agencies sign up and bring additional applications to the table.

TELECOM CATALYST

Daniel Briere

How one community got DSL

It's not news that the telephone company databases feeding broadband customer service front ends can be wrong. Like me, you've probably been in the position of trying to convince a customer service representative that you really should be able to get broadband in your area, despite what the computer says. Usually your perspective is driven by common sense ("My house is right next door to the central office") or things too obvious to ignore ("Nineteen of my neighbors have DSL"). But what do you do when your telco tells you your entire community does not qualify for DSL?

This is the story of Larry, Erik, Jim and a small island community 2 miles off the coast of Portland, Maine. Portland was one of the first cities to get digital cable. It has DSL and competitive broadband providers. But despite being taxpayers of Portland, the small island where I vacation has been bypassed by the telecom revolution: Portland's cable franchise is excused from having to offer DSL to the smaller islands off Maine's coast because of low population.

So you can imagine the excitement when Verizon finally offered DSL in the central office on Peaks Island, which serves all the islands in the area. That excitement, however, dimmed quickly when neighbor after neighbor tried to qualify for service through Verizon's online DSL ordering interface. Almost all were rejected for unknown reasons; a few people were randomly approved, ordered the service, received the modems and tried to establish service, only to be told by support personnel that the loop lengths disqualified them for service. They still had the modems when I became involved in this story.

I called Verizon and was told I was disqualified for having a loop length of 18,100 feet — a scant 100 feet beyond the limit. So I called Larry, my contact in Verizon's PR department, who's always delivered when I needed him to (though for editorial, not technical, reasons). Larry promptly introduced me to Erik in Verizon's Presidential Appeals group. Erik got Jim, the local island technician, to visit. "Every single line on this island is within 18,000 feet of the central office," Jim said, adding that the copper plant is less than 20 years old and should well be able to handle anyone who wants DSL.

So why couldn't we sign up? Jim explained that the databases for the community were basically empty, and lacking any solid data, the system just rejected us.

But our story ends happily because Larry, Erik and Jim did what a computer could not do — they just made it happen. Armed with the knowledge that people could get DSL on the island, I e-mailed everyone, gave a list to Verizon, and Verizon now has almost two dozen more customers (and growing) as people sign up — monitored by Erik to make sure it goes smoothly. And guess what? We all love Verizon now — we're part of the broadband in-crowd.

Telcos need a process for communities like this one. We need the ability to jointly petition for service. Orders speak volumes and allow you to bypass channels, I understand that. But give users that path. British Telecom used this strategy when extending its broadband service to remote communities. Sign up X number of people in your community and we'll make the investment. It's the polite version of "Show me the money." This was a win-win for all involved.

What are the lessons from this experience? That tapping the insight of people like Jim, who have personal knowledge of their area, can truly expand growth in places where such growth might have been lacking. That people like Erik are sorely needed to get by the hurdles that really can stem growth — an executive support group is sometimes hard to cost-justify, but in this instance, it opened a whole new community of revenue for the telco. And that it always pays to know someone like Larry in the telco.

Briere is CEO of TeleChoice, a market strategy consultancy for the telecommunications industry. He can be reached at telecomcatalyst @telechoice.com.

What do you do when your telco tells you your entire community does not qualify for DSL?

Unfortunately for users, no single vendor can provide a complete ILM solution and the experts are saying that far from being a quick fix, ILM is probably a five- to seven-year project. Still, the benefits are real both in terms of saving money and making the business run more smoothly. In this Technology Insider, we profile users who are on the cutting edge of ILM and describe how ILM can be one of the building blocks of the new data center.

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MasterCard International has 360Tbytes of data on an expensive, EMC Symmetrix-based SAN. But that's about to change as the company moves to ILM.

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If you're looking for an out-of-the-box ILM solution, you're out of luck. But if you're moving to an automated, on demand, utility-based data center, you need to look at ILM.

48

The Fred Hutchinson Cancer Research Center in Seattle saved $100,000 by moving data from disk to tape.

Online

Learn the important steps in prioritizing and managing your enterprise-wide data in our IT Briefing Webcast. You'll get expert insight from Senior Editor Deni Connor. www.nwfusion.com, DocFinder: 1129.

Users take baby steps on road to information life-cycle management.

Tier factor

BY MARY BRANDEL

Before embarking on the implementation of a new storage architecture at North Bronx Health Network, there were certain things Dan Morreale knew. The CIO at NBNH, one of six regional hospital networks in New York, knew he was always running out of storage space. He also knew that government rules such as the Health Insurance Portability and Accountability Act were changing how hospitals needed to retain data.

What he didn't know was that his response to solving these problems would set him on the road to information life-cycle management (ILM). That is, rather than put all 100T bytes of data on an EMC Symmetrix-based storage-area network (SAN), Morreale opted to purchase two additional tiers of less-expensive and slower EMC-based storage, a Centerra and a Clariion system. That way, hospital data can move among the tiers based on its criticality, how long it needs to be retained and how quickly users need to access it. "It was a real process of discovery," Morreale says.

ILM is tough to ignore in the storage industry these days. Every storage vendor, it seems, is touting an ILM strategy. A lot of users have jumped on the bandwagon, as well, using the term for just about anything they've done to gain control over their ever-growing data, from centralized backup to database archiving.

In its purest form, ILM is a combination of processes, policies and technologies that classify information according to the corporation's policy, store it in a tiered architecture and transparently move the information among those tiers based on the information's value, business process needs, user access needs and retention/deletion requirements.

Deployed correctly, an ILM system will ensure that information moves to the right place at the right time as it changes in value, from the moment it's created to when it needs to be deleted.

ILM might sound a lot like hierarchical storage management (HSM) from the mainframe world. However, HSM manages only files, while an ILM strategy manages structured, semi-structured and unstructured data in a heterogeneous, networked environment. While HSM moves data based on objective measures, such as how often users access it, an ILM strategy is supposed to consider the value of the information, using parameters such as age, access frequency, date of last access, size of file, type of file and other tags the administrator attaches.

ILM: It's a long march

For all the talk, no user has yet implemented a full-blown enterprise-wide ILM strategy, according to analysts. Despite all the data migration, storage resource management and SAN management software on the market, as well as the policy engines, document management systems and archival tools for databases, e-mail and files, the technology pieces to support full-blown ILM are not yet available.

Developing an ILM strategy is a five- to seven-year endeavor requiring the cooperation of an entire corporation and backing from the CEO, according to Randy Kerns, a senior partner at Evaluator Group, a storage analysis firm.

"Even the most sophisticated users are just at the whiteboard phase," says Steve Duplessie, founder and senior analyst at Enterprise Strategy Group. "Others have not even gone to Staples to buy a whiteboard."

Morreale says his system is far from complete. His group uses EMC ControlCenter to manually move data; but automated, policy-based data movement is at least a year out. Morreale also would prefer to use just one tool set that sits under one control element rather than manage the variety of SQL datastreams and other scripts the group currently uses to augment ControlCenter's capabilities. He also would like a system that could manage data on a more-detailed level, rather than as large blocks.

So why all the hullabaloo? Well, it's amazing what soaring data growth, the high cost of managing data and increasingly strict regulations will do. "Five years ago, we could afford to have everything stored on an EMC Symmetrix system," Duplessie says. Since then, data has grown fivefold, faster than the cost of storing it. "Treating data like we did in 1975 is economic stupidity," he says.

But rather than swallow the entire ILM elephant in one bite, analysts say IT groups should analyze their information storage and retention needs — with lots of interdepartmental discussion — to determine each data set's retention, access and speed-of-retrieval needs. In the shorter term, companies should address storage pain points with technology and policies that fit within that larger strategy.

Pain points might include out-of-control e-mail growth or a slow-performing database. E-mail archiving is a hot area, according to Ray Paquet, an analyst at Gartner. "People do e-mail archiving to improve performance or conserve disk space or for regulatory purposes," he says. These smaller bites will keep the project manageable and will drive ROI. "If a project takes more than six months, it's three times less likely to achieve ROI," Paquet points out.

Timing is everything

The key to ILM is to classify data by its age and business value.

PRIMARY (ONLINE) STORAGE	SECONDARY (NEARLINE) STORAGE	LONG-TERM RETENTION
• Readily available • Enterprise class disk • High-performance • Mission-critical OLTP and database applications • Mirroring	• Accessible without operator activity • SATA disk, virtual tape • Fixed content, backup, reference data • Replication	• Removable media • Fixed content • Sarbanes-Oxley, HIPAA, government regulations • Tape libraries, deep archive
Stores active data	*Stores reference data, many times read-only*	*Stores archived data that is not expected to be needed*

DECREASING PROBABILITY OF REUSE

INCREASING AMOUNT OF DATA

SOURCE: EVALUATOR GROUP

ILM: It's largely methodology

Doing the upfront work of developing an enterprise-wide ILM strategy is a low-tech but challenging job. Kerns says many users will need to turn to professional services for this strategy work. Although it might be tempting to skip this step — which analysts admit is painful and tedious — it is a crucial one.

Paquet advises approaching your data as three separate categories: unstructured data, such as files; semi-structured data, such as e-mail, and structured data, such as databases. "These are three distinct problems that need three distinct technologies and three distinct tools," he says.

You can further classify your data into three hierarchical buckets, Duplessie advises: gold, silver and bronze. For each bucket, define the data's needs in terms of reliability, disaster recovery, backup, retention, availability and performance, and then map those buckets to your storage infrastructure.

But this can't be a one-time exercise. Data values change, so you need to create business policies that support the movement of data onto higher or lower storage tiers as needed. You also need to maintain a central repository of metadata, or "data about your data." Policy engines, discovery tools and other systems are being developed to recommend what data should be moved based on subjective analysis and then automate data movement.

What is ILM?

Information life-cycle management is comprised of the policies, processes, practices and tools used to align the business value of information with the most appropriate and cost-effective IT infrastructure from the time information is conceived through its final disposition. Information is aligned with business processes through management of policies and service levels associated with applications, metadata, information and data.

SOURCE: SNIA DATA MANAGEMENT FORUM

As straightforward as that sounds, this strategy work treads on thorny territory. "It's daunting at best because the information can touch many people within the organization," says Dave Johnson, director of IT at Grant Thornton, a global accounting firm. The Chicago company recently formed a task force to study information flow throughout its 50 U.S.-based offices. This includes paper-based and electronic documents — including what's stored on people's notebooks, which Johnson says poses the biggest challenge.

"Our most valuable information resides on our notebooks," Johnson says.

And the stakes are high: "In the world of Sarbanes-Oxley, you have to retain information related to any engagement that's significant," Johnson says. Although he has implemented a centralized back-up strategy for portable computers, he also needs to create a post-engagement archive for

See ILM, page 42

MasterCard gives credit to ILM

For Jim Hull, vice president of engineering services at MasterCard International, there's nothing new about information life-cycle management. "You're just identifying what you need to keep, how many copies, in what form and for how long, for reasons that are driven by the business," he says.

In its mainframe environment, MasterCard has used hierarchical storage management (HSM) software for years to move data from one medium to another.

What's new, Hull says, is the appearance of HSM and ILM tools for the Windows NT and Unix environments. MasterCard is in a good position to take advantage of these tools as they emerge early next year.

"In 2004, there will still be a lot of vaporware, but toward the end of this year, there will be products that do what they say they can do," Hull predicts. "By 2005, we'll start seeing companies like MasterCard building on what they have."

MasterCard houses its 360T bytes of data on a predominantly EMC Symmetrix-based storage-area network (SAN). About 20T bytes sit on lower-performance Hitachi Data Systems storage servers that are integrated with the SAN. All the data is managed via EMC's AutoIS and ControlCenter software.

However, Hull plans to implement a three-tier storage architecture. On the first tier, the Symmetrix systems will house business-critical, highly available data, while the second tier will consist of EMC Clariion or equivalents from Hitachi or IBM. "The cost differential between Symmetrix and Clariion is a sixfold difference," Hull points out. The second tier likely will house data from MasterCard's test and development environments and perhaps its data warehouse. The third tier will be Clariion-type systems with less-expensive and lower-performing Serial Advanced Technology Attachment drives rather than the more-expensive Fibre Channel drives.

Making the data move

Hull is evaluating EMC/Legato Systems' DiskXtender, which has the ability to move PowerPoint, Excel and other files off NT servers to lower-cost storage systems using rules that the user sets up. However, Hull is waiting to see whether DiskXtender becomes available for Unix servers. "The last thing I want to do is buy something that works for NT, which represents about 1,000 servers here, and another for our 800 Unix servers," he says.

MasterCard also is in the process of adding a virtual tape storage system for the NT/Unix environment, which will be compatible with DiskXtender. Already, virtual tape in the mainframe environment has enabled Hull to eliminate nine storage silos.

Hull is approaching his e-mail data separately, using EMC's Centerra system and EMC/Legato's EmailXtender. "From a regulatory standpoint, we're seeing more demand for queries on e-mails about who said what to whom on such-and-such a business deal," he says. The Centerra system helps with compliance and cuts down on storage costs by storing one copy of messages sent to multiple recipients. "The software allows you to quickly search for all versions of e-mail discussions and gives you the ability to know what was changed by whom and when," Hull says.

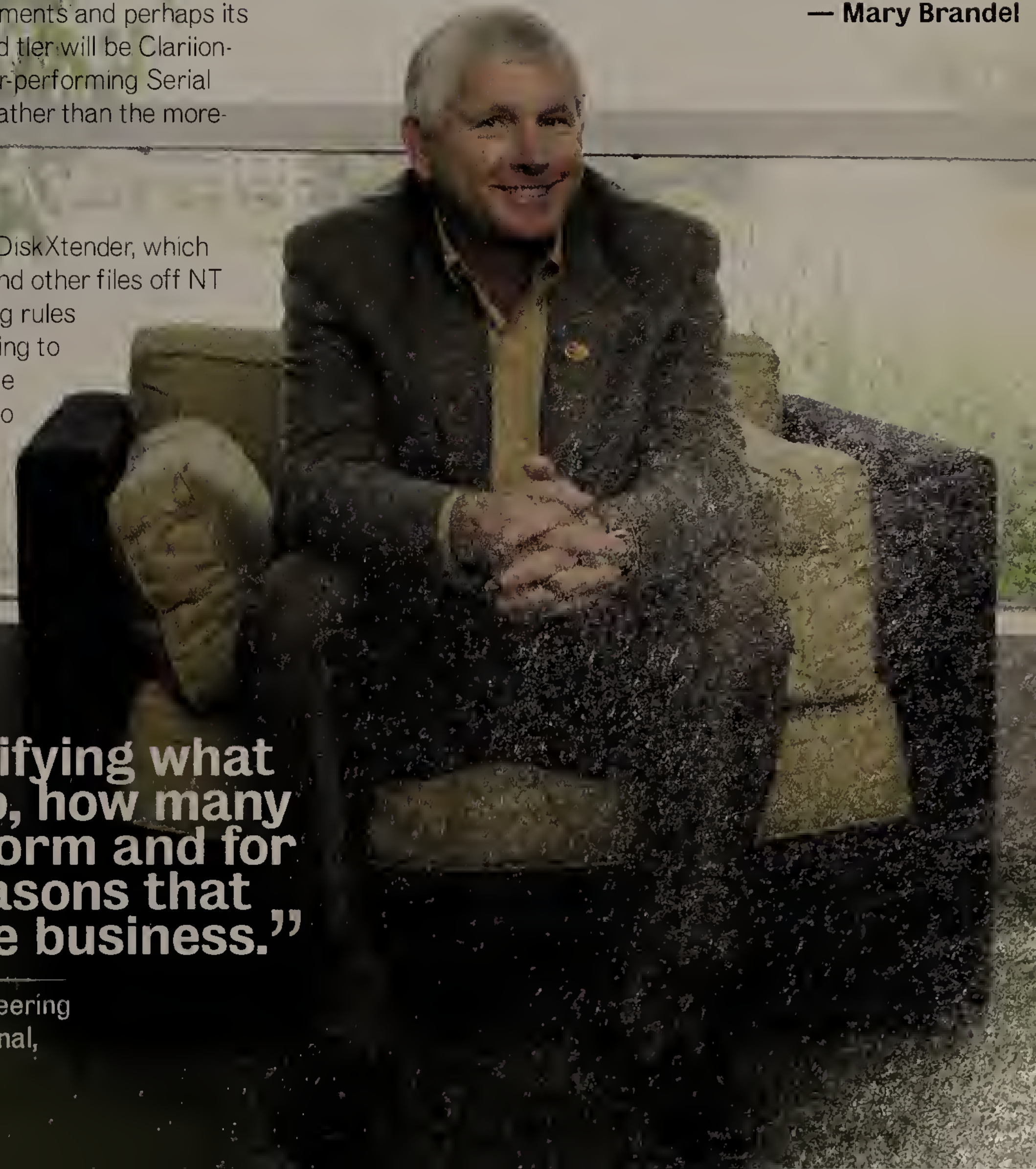
In the future

Hull has yet to explore a database archiving strategy. "We don't want to just back up and retain all that data," he says. "One of the major benefits of HSM is it helps you only keep certain things online and push others to off-site storage and move it back if you need it. That's a whole lot better than having to manage it personally."

Despite all the footwork MasterCard has done to determine its ILM needs, Hull says the job is never over. "We have a pretty good handle on it today, but business requirements will always evolve," he says.

For instance, in its mainframe environment, MasterCard used to keep four years of data online, but after analysis, it determined nobody was accessing the data after Year 4. Hull's group was able to significantly reduce costs by moving Year 4 data to a tape system. "Those are the kinds of things we'll look at as we get more focused on storage and the management of it to reduce our total cost of ownership," he says.

— Mary Brandel



> "You're just identifying what you need to keep, how many copies, in what form and for how long, for reasons that are driven by the business."

JIM HULL, vice president of engineering services at MasterCard International,

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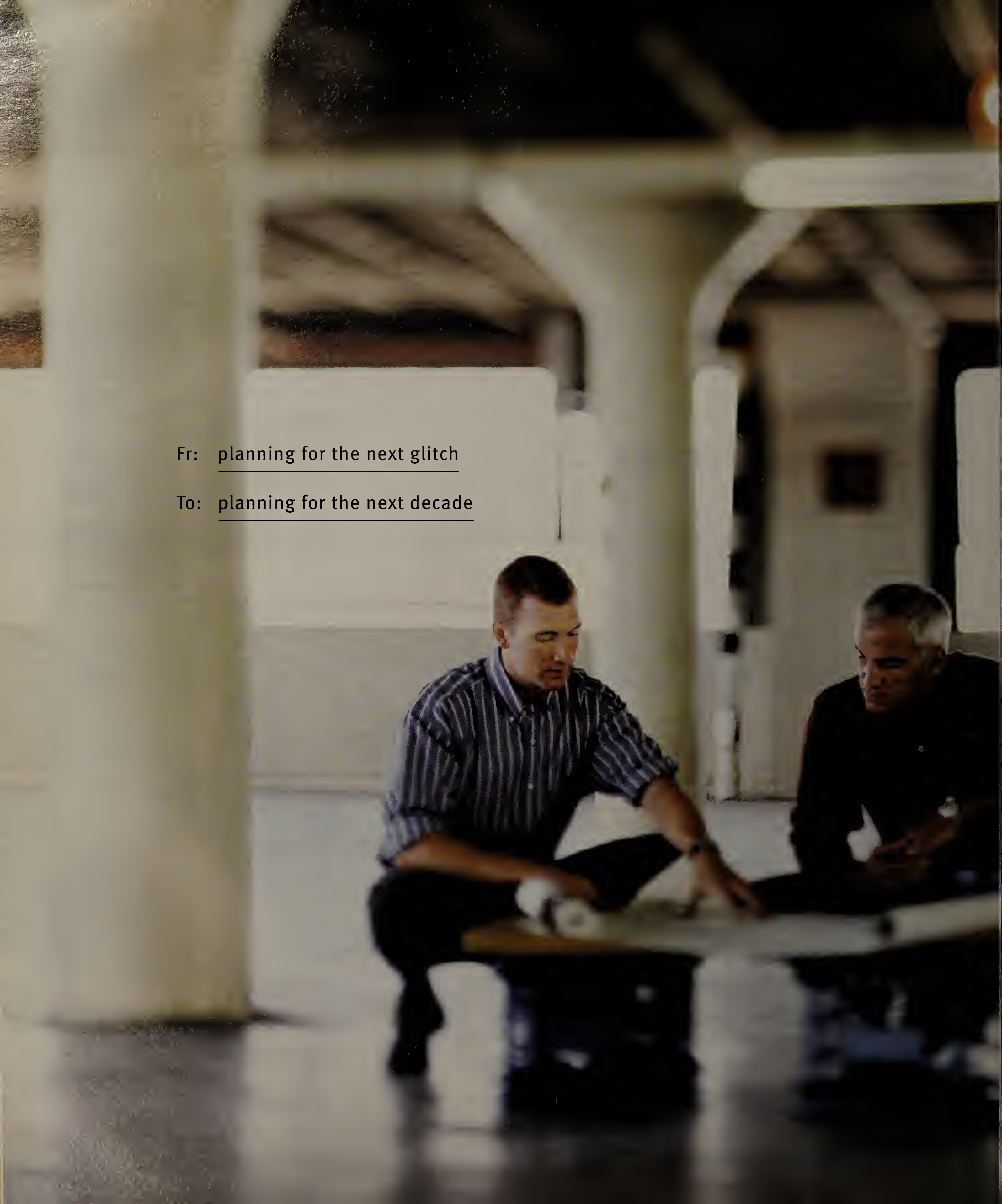

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ILM

continued from page 39

completed projects, and this archive needs to be searchable in case of litigation. Furthermore, he wants automated tools that would retire the data when it no longer needs to be retained.

Although, before he looks into the necessary technology to do this, the task force needs to create a methodology for storing and archiving data based on individual projects rather than on the geographical location where they were created. "This is a people- and process-focused, not a tech-focused, solution," Johnson says. "The technology is just a methodology of storing data once you get your arms around it."

ILM: Implement logical migrations

It is possible to resolve your most dire storage problems using an ILM-like solution while keeping your eye on a more complete solution. At Motorola in Schaumburg, Ill., the biggest storage concern within the Personal Communications Sector (PCS) revolved around Sarbanes-Oxley and the performance of its Oracle database, says Bill Brewer, global IT configuration manager.

Brewer chose database archiving software from OuterBay Technologies to migrate customer account information that is more than 15 months old from production databases to an EMC Symmetrix SAN. The solution has increased database performance by 68% and kept required data online and easily accessible without consuming production server space. Brewer says he hopes to eventually incorporate less-expensive Clariion-based storage to further reduce storage costs while maintaining seamless end-user access. His current outsourcing contract lets him use only EMC Symmetrix systems.

"We hope to get to the point where the archive data would move onto the cheapest storage and the high-powered data would stay on the production ERP schema," Brewer says.

Before implementing the OuterBay software, Brewer needed to define the business rules for the PCS business unit in the U.S. "Our ERP system is in multiple countries, and each has compliance regulations," he says. For instance, the retention period in Mexico is 10 years, while in China it's 20 years. The OuterBay system also let him define other rules, such as to not archive if a transaction is open or if its closing date hasn't passed.

The bad news about ILM is that the upfront work can be daunting, the technology is immature and expensive, and there are plenty of internal politics to deal with. For instance, if IT can't communicate with business leaders or even get database administrators talking with storage managers, they won't get anywhere.

The good news is any action you take to analyze your corporate information or improve data management is a step in the right direction. "If all you do is just classify your data and understand your usage and access patterns, that's a remarkably powerful thing," Paquet says. "Even if you just put your new data in a tiered infrastructure, you can see significant cost savings."

There's plenty to do even if you're not ready to make a technology selection. "Without retention rules and a well thought-out policy of the aging of data over time, the technology won't do anything for you," Morreale says.

For users like Morreale, the important thing is to get started. "I'll start something even if I know the pieces aren't in place — that's how you innovate," he says.

Brandel is a freelance writer in Michigan. She can be reached at mary.brandel@comcast.net.

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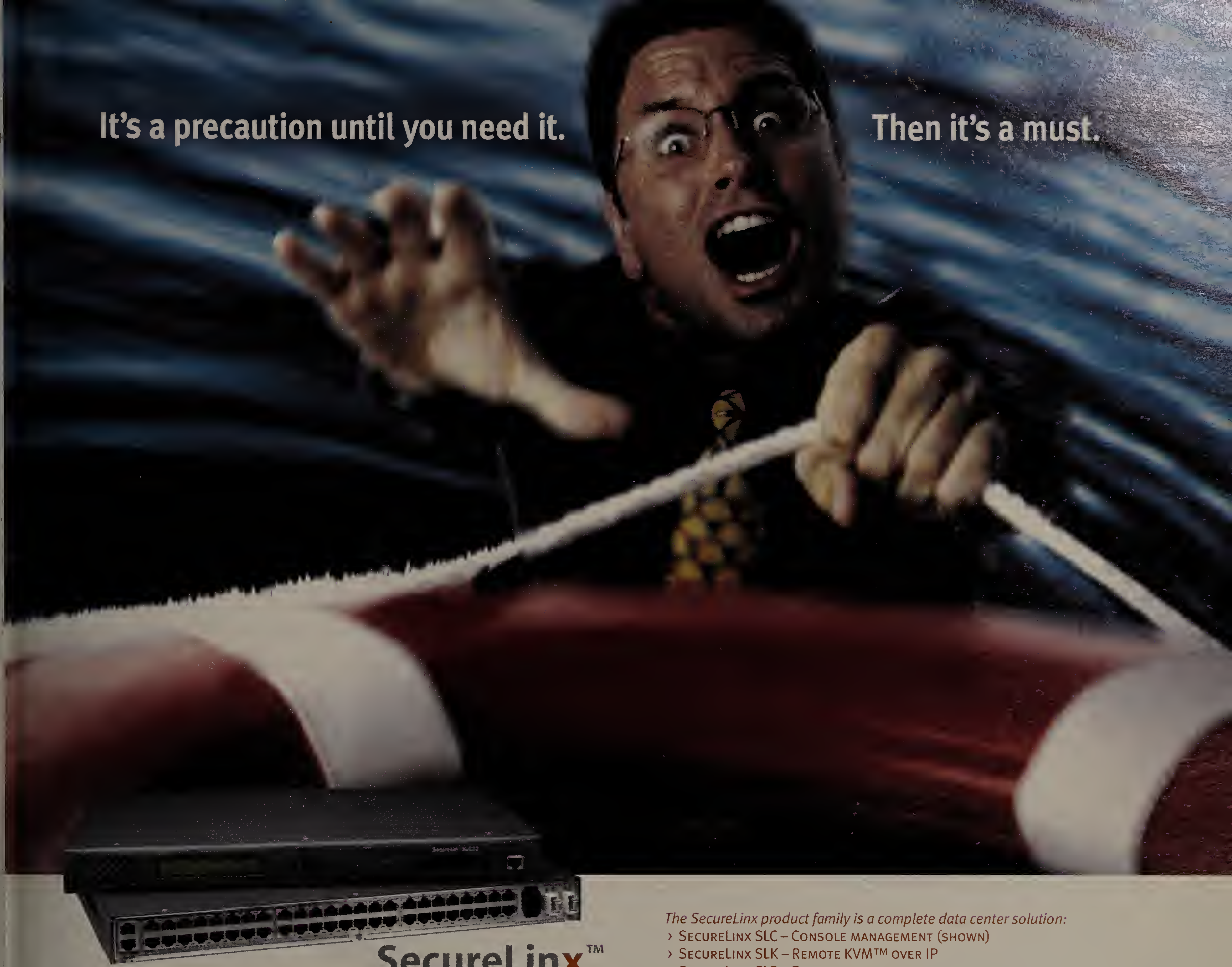
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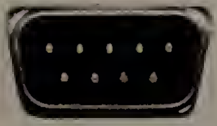

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Complete ILM solution doesn't exist today, but that doesn't mean you shouldn't seek the benefits of data classification.

You can't get there from here — yet

BY MICHELE HOPE

By now, most IT executives have heard of the importance of having an information life-cycle management strategy. Not surprisingly, much of the ILM buzz has been generated by storage vendors eager to jump on the ILM bandwagon.

"If you sell dog food today, you've got an ILM story. Even people with the most obscure product have an ILM story," says Richard Scannell, vice president of consulting for GlassHouse Technologies. "The real issue is that you can't buy an ILM solution today. There's no ILM in a box."

Most industry analysts agree with Scannell that ILM is not a product suite you can buy from any one vendor. Nor will it be in the near future.

"One thing I note when I work with customers is that ILM and how to get there is nothing that's a big bang theory. It doesn't happen immediately or is something you can buy off the shelf," says John Herrera, vice president of global solutions operations for EMC, an early proponent of ILM.

But that doesn't mean ILM should be ignored either. If you define ILM as a set of practices or processes that lets IT treat data based on its usefulness or value to the business over the life span of the data, then few IT managers can deny the potential value of ILM.

At its core, ILM involves classifying data based on varying degrees of importance to the business (such as mission-critical vs. operational).

Once data is classified appropriately based on its value, ILM strategies involve developing rules, service-level objectives (SLO) and management policies that address how each class of data should be treated. These rules define how the data will be stored, protected, migrated and accessed over time to or from different tiers of storage (such as primary, secondary and offline).

ILM and the data center

So, what's the benefit of ILM? Michael Peterson, program director for the Storage Networking Industry Association (SNIA) Data Management Forum — which is spearheading its own ILM initiative and five-phase ILM road map — says: "The vision we have for ILM is as a new management process for the data center. The No. 1 problem in the data center today is complexity. The No. 1 problem with owning and operating storage is complexity. . . . The real power of ILM is to reduce the cost of operations by 100x — by solving the complexity problem."

At the final phase of the forum's ILM road map, which Peterson estimates at anywhere from five to eight years away, there will be automated, end-to-end ILM solutions that run independently of any one business-side application, can scale across a company's geographic and organizational boundaries, and will automatically store, protect, replicate, move, copy or archive data to various storage media based on how a company's own policies and SLOs have defined the data over time.

The hope of ILM is that data management software will evolve to automate the process of managing such policies and the underlying data. Peterson says he expects to see a new breed of ILM management utilities and storage operations management software entering the market as a means to address this issue.

Even at this early stage, Peterson says there is still immediate benefit to IT managers who place themselves at the start of the forum's road map. Citing a number of cases where companies have begun to follow the road map, he says: "They are classifying and setting service levels and already finding that going to that level has begun to improve their operations. People are starting to get benefits of beginning to work this way."

ILM by the numbers

It may look relatively easy, but achieving full ILM could be a five- to seven-year process.

Step 1	Step 2	Step 3
Deploy tiered infrastructure	**Deploy application-specific ILM**	**Enterprise-wide ILM**
• Establish classes of infrastructure • Place information on appropriate infrastructure tier • Deploy storage management automation	• Define business and migration policies for various information types • Deploy enabling components for principal applications	• Implement ILM across applications • Policy-based automation • Full visibility into all information

SOURCE: EMC

EMC, Veritas on the minds of enterprise IT

Taking at least the first few steps to develop an ILM strategy appears to be gaining traction among enterprise IT managers. Preliminary findings from a recent study of more than 100 Fortune 1000 companies, conducted by research firm TheInfoPro, show ILM as one of the top five storage management technologies IT plans to implement in 2004 or 2005 (see graphic, page 48).

Two-thirds of study participants indicated they had some type of ILM strategy in place now or that they were planning to implement an ILM strategy over the next few years.

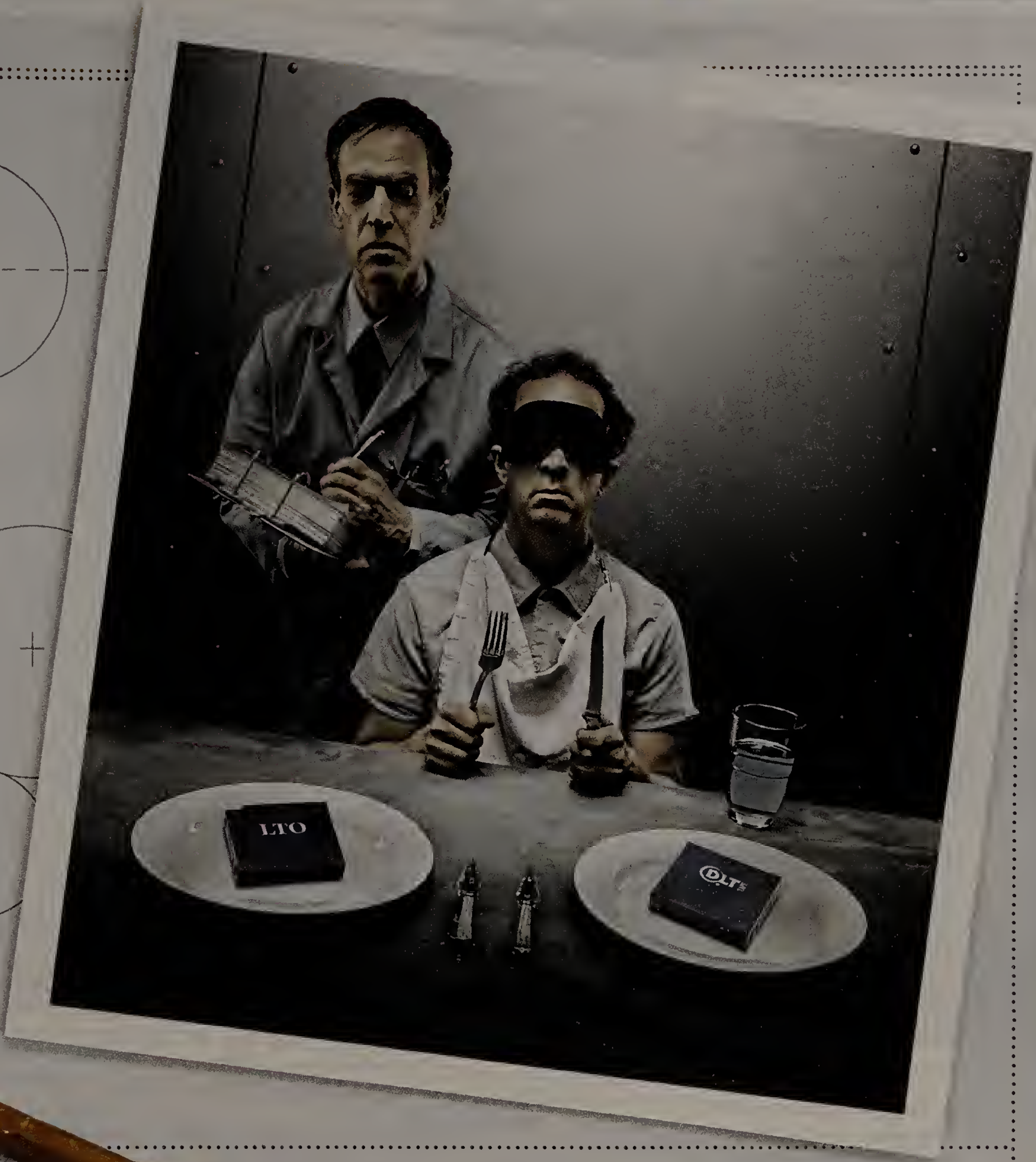
According to Ken Male, founder of TheInfoPro, some of the early themes around ILM in the study include growth in tiered storage, disk-to-disk and Serial Advanced Technology Attachment, and growth in use of other storage hardware media such as network-address storage products and mid-tier storage array offerings. "Our customers are telling us that they are tiering their storage — but it's really setting them up for a future ILM strategy," Male says.

When asked to indicate which vendors they planned to use over the next few years to assist them with implementing ILM, study participants placed two storage vendors in the lead: EMC, followed by its rival within the data management software market, Veritas Software.

EMC came out of the gate early to articulate the benefits of ILM and educate IT organizations on EMC's own ILM vision and three-step implementation framework (see graphic, left). EMC's recent spate of software-related acquisitions, including Legato Systems, Documentum and VMware also have been carefully positioned to bolster EMC's ILM vision.

Not to be outdone, Veritas has acquired data management-related software companies. (Recent acquisitions include Precise/WQuinn, Invio Software and U.K. e-mail archiving vendor KVS.) According to Jeff Lundberg, senior manager of Veritas product marketing, "Veritas really espouses the utility computing vision — which incorporates a lot of the components conventionally lumped in with ILM. Realistically, we're saying data life-cycle management and information life-cycle management are part of what these IT organizations need to do — but on top of that is the need to do other things as well, such as reporting, charge-back and application performance

See Future, page 48



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SAN Monitoring Ensures the Show Goes On

It's 2:20 and a graphic artist for a major T.V. studio is rushing to complete a promotional trailer for that night's prime time shows. She adds the finishing touches and hits the save button. An error message indicates that the save has failed; she curses the network under her breath and tries the save again. After the third failed save, she picks up the phone and dials her boss, worried her deadline is about to be blown. Then she dials the IT department. She's assured IT is on top of the problem; it will be fixed momentarily, so no need to worry.

Network problems that interfere with user deadlines are a serious issue, particularly in the entertainment industry where a blown deadline can translate into millions in lost revenue. Networks in the entertainment industry face special demands, with streaming media in the form of video and audio the predominant form of data. Due to their large size, streaming media files pose significant storage and management issues. In addition, streaming applications are sensitive to transmission interruptions and slowdowns; any decrease in network bandwidth or increase in latency can result in problems ranging from jerky video to lost connections. As enterprises increasingly deploy streaming media applications, such as training videos, they're facing similar challenges.

To address these issues, many organizations are turning to storage area networks (SANs) for a high-performance storage infrastructure and to specialists such as SAN Solutions, Inc. to help them architect and deploy the optimal SAN. Focused on the entertainment industry and other users of streaming media, SAN Solutions has developed the expertise needed to accommodate the most demanding SAN environments.

To meet the rigorous performance and availability requirements of clients such as Sony Pictures Entertainment and Skywalker Sound, SAN Solutions uses SAN management tools during every phase of a project, including planning, piloting, and deployment. After careful consideration, SAN Solutions selected Finisar's NetWisdom as its primary management tool. A real-time performance monitoring application for both fibre channel SANs and Ethernet LANs, NetWisdom monitors SAN operation end-to-end, providing detailed performance data for all SAN components in a consistent, easy to interpret format. It can be configured to monitor a variety of parameters, including data rates, latency through the SAN, link utilization, Fibre Channel and SCSI errors, and individual application "conversations."

"Finisar's network management tools are a complete solution to achieve effective monitoring of SAN infrastructures," notes Harry Aine, SAN Solutions' president. Aine knows how important SAN uptime is to his clients, who work under tight deadlines to deliver everything from spot ads to program promos to broadcasters and distributors. He knows how important it is to design a SAN for performance and to monitor that performance on an ongoing basis.

> **"Finisar's network management tools are a complete solution to achieve effective monitoring of SAN infrastructures," notes Harry Aine, SAN Solutions' president.**

During a recent project, SAN Solutions utilized Finisar's NetWisdom to monitor a SAN during the pilot phase in order to determine the latency and bandwidth requirements of the client's applications. The SAN infrastructure needed to be optimized for real-time data streams, so NetWisdom was also set up to monitor and characterize any performance hits incurred when management applications were invoked or settings changed. Overall, SAN Solutions configured NetWisdom to track nearly 40 parameters.

The monitoring proved invaluable when users on the pilot network experienced an application problem. In essence, their media application, which operated on Standard Definition TV uncompressed video, crashed. Using NetWisdom, SAN Solutions' engineers were able to determine that the total write time exchanges were off. It was taking a particularly long time for the users' application to write out a data stream, and during that time the storage array stopped responding. The problem recurred on a regular basis.

Armed with this data, the client approached the storage vendor, who determined that the write problem occurred when the storage system performed periodic housekeeping functions. Through a firmware update, the vendor was able to move the storage systems' housekeeping functions to times of day that were off-hours for the client's users. The problem disappeared and SAN performance stabilized.

"Sometimes if there's a SAN problem people try to solve it by doubling up on hardware," notes Aine. "That's an expensive solution that may never resolve the real problem. With NetWisdom, we're able to accurately determine the root cause of anomalies and ensure they're properly addressed."

And given how quickly a client's environment can change, with new users and applications added to the network, ongoing SAN monitoring is crucial. Consequently, SAN Solutions establishes a performance baseline for each SAN and uses NetWisdom to monitor thresholds in order to quickly identify changing usage patterns. In this way, changes to the SAN infrastructure can be made and new performance baselines established before users experience any problems.

"Using the Finisar products, we have the expertise required to isolate any faults and get to the bottom of any performance problems," Aine says. Which means the show can go on.

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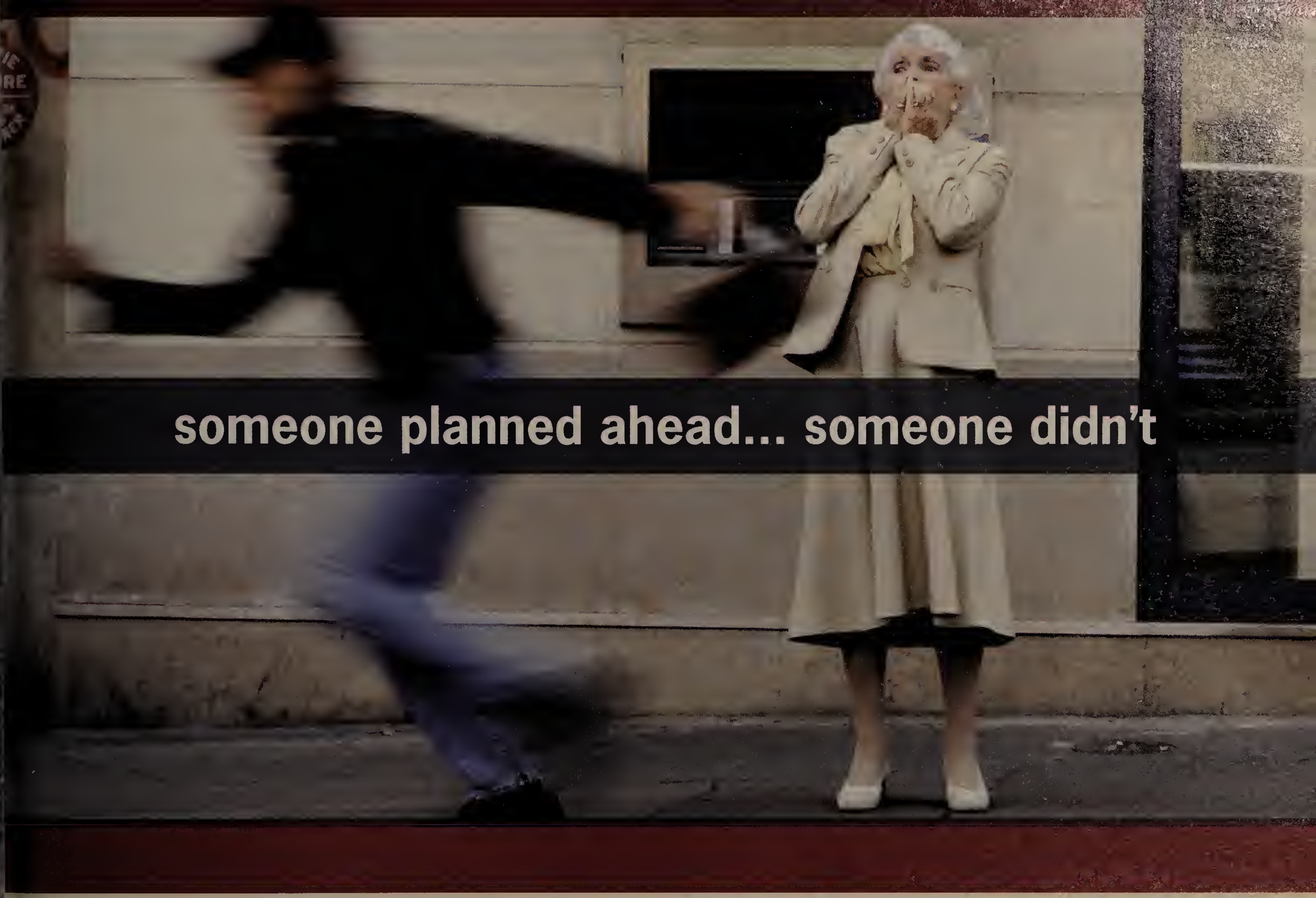
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*Source: Fabric Computing: Beyond the N-tier Data Center, RBC Capital Reports Oct 2003

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Future
continued from page 44

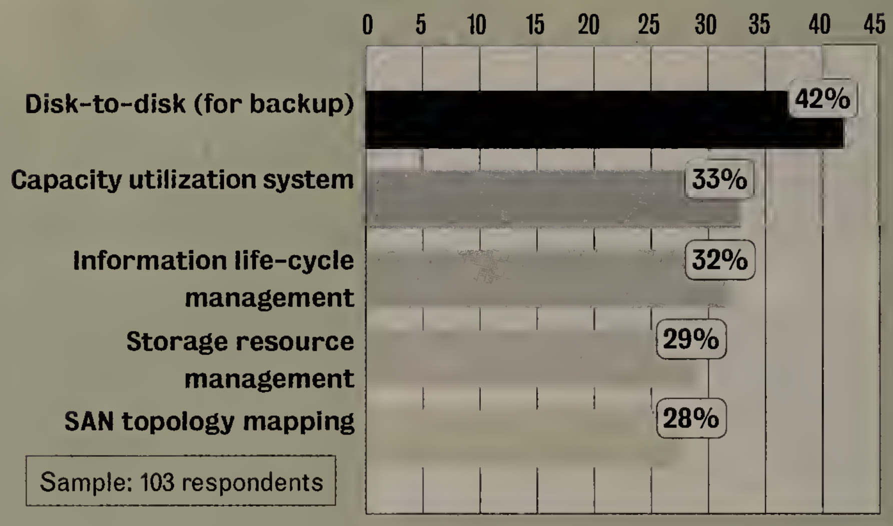
management."

Enterprise Strategy Group analyst Nancy Marrone-Hurley connects ILM to utility computing this way: "Information life-cycle management is a subset of a utility environment, also known as an on-demand, adaptive or autonomic environment. [With ILM], there are significant cost savings [IT managers] will realize in capital, in hardware cost savings as it relates to storage, in administrative cost savings and, more importantly, in being able to better protect their data. In the long-term, if anybody ever wants to implement a utility environment, they need to implement ILM processes first in order to lay the groundwork. You can't expect the underlying infrastructure to be adaptable if you haven't set these processes up."

Many say that once this initial groundwork for ILM is laid, choosing the software or hardware technologies to support ILM becomes a much easier proposition.

ILM hits IT radar screen

ILM ranked third in a survey that asked companies to list their top five storage management technologies for 2004-2005.



SOURCE: THE INFOPRO

"There are a couple of things IT organizations need to understand about ILM: It's 90% process, 10% technology," says Phil Goodwin, a former senior program director for Meta Group, now with Diogenes Analytical Laboratory.

His advice to IT managers embarking on the first ILM steps? Spend your first few months learning how data is being utilized in the organization. Focus attention on the pain points surrounding your critical applications and data. Expect to spend 12 to 18 months on critical applications. Then, start over with your less-critical applications, he says.

Develop no more than three to five classifications, such as mission-critical data, business-critical data and operational data. "All of these imply the information is important to the organization. You can't afford to lose it," he says.

Then develop rules to identify more-specific data characteristics. Goodwin says most organizations would benefit from the establishment of an IT or storage policy director to spearhead this effort. "This policy director, for lack of a better term, is someone who is responsible for establishing these rules and interfacing with the business units," he says.

From there, he suggests handing off policies to system architects who can develop the appropriate solutions and infrastructures to support them.

While ILM does not happen overnight, EMC's Howard Elias, an executive vice president in the company's office of technology, agrees with Peterson that customers can start seeing early fruits from their labor.

For example, Elias says consultants might look at customer data stored on high-end Symmetrix arrays and be able to identify 25% or more that he'd classify as "inactively accessed fixed content." In these cases, organizations which move that data immediately to a lower-cost alternative, such as the company's mid-tier Clariion offering, will immediately see better use from their storage resources.

The second step in EMC's ILM road map suggests IT look to specific applications — such as e-mail systems and company databases — as key candidates to help automate predefined policies and migrate data classes to archives. This is where products such as EMC's EmailXtender, DiskXtender and DatabaseXtender come in, he says, to help deliver policy-based data movement across storage tiers.

EMC's final ILM implementation step is to use a common workflow-based policy engine that tracks and moves data across multiple applications across the corporation, Elias says. "Even though [the data] came in from SAP or an e-mail database, it will have the same policy engine. This is where it truly becomes enterprise-wide, application agnostic," he says.

EMC sees its Documentum product fitting this bill, although Elias acknowledges the company and the industry still have a way to go before they can help IT organizations get to this step.

Hope, owner of TheStorageWriter.com, writes about enterprise storage issues for IT publications and clients. She can be reached at mhope@thestoragewriter.com.

Cancer Research Center moves to tiered storage as it battles exploding data management requirements

What would you do if data at your company was growing 100% to 150% annually? At the Fred Hutchinson Cancer Research Center in Seattle, the answer was a two-tier — and soon-to-be three-tier — storage architecture that uses hierarchical storage management software to keep the most-current data on the highest-performance platform and moves older data onto tape.

"Our research instruments are spewing more data that we have to collect and track, and it's richer data, so it's larger in size," says Tim Hunt, research computing support manager at the center. "But we don't want to keep purchasing expensive hard drives for old data — we want to be efficient."

Hunt's current architecture consists of a Sun e4800 server that acts as a portal to a Sun 6320-based storage-area network (SAN) and a Storage Technology 1700 tape library with 678 slots. The e4800 server runs IBM/Tivoli Storage Manager back-up software, and Space Manager HSM software that migrates data from the SAN drives to the tape system, based on how full the file systems are and the last time the data was accessed. The tape library is connected to the e4800 via direct-connect SCSI cables, while the SAN is connected via two Fibre Channel switches for redundancy.

"We can set a threshold for our file systems that when they're 60% full, the HSM software kicks in and migrates the files that haven't been used," Hunt explains. His group can manipulate the size of different users' file systems to accommodate their varying data access needs. "Some people need to look at their data a year after it's been created, while others only look at it a month after it's been created and then never again," Hunt says. "We size our file systems so that data either stays on disk longer or is migrated off to tape to make room for more important data."

Once data is moved to tape, users still can access it — they just experience a 20- to 30-second delay. There have been no complaints about this delay, but Hunt is evaluating the idea of adding a faster third tier of storage based on Serial Advanced Technology Attachment drives, which are faster than tape but slower than the more-expensive Fibre Channel-based drives in the Sun SAN.

Hunt also is mulling the possibility of a fourth tier, using slower but higher-capacity tape drives than his current StorageTek system. This would house very old data that would otherwise be moved off-site, creating complexities of tracking it down if it were ever needed.

So far, by adding just the second tier, Hunt has saved $100,000 in SAN drives that he would have had to purchase to keep data available to users.

Hunt can see the usefulness of being able to migrate data based not just on last access date but also on its value — an approach ILM proponents are touting. Currently, however, "I can't distinguish what data is important and what's not," he says, "and I'm not sure I want to. I've got enough to worry about, with keeping up with data growth and making sure people can access it."

At the same time, Hunt is glad these capabilities might be available in the future. "I'm glad people are talking about it because it's a real issue for those of us who deal with a lot of data. We have a lot of gray hairs on our head," he says.

—Mary Brandel

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The theft threat

Don't overlook the security risks posed by portable storage devices.

■ BY BARTON MCKINLEY

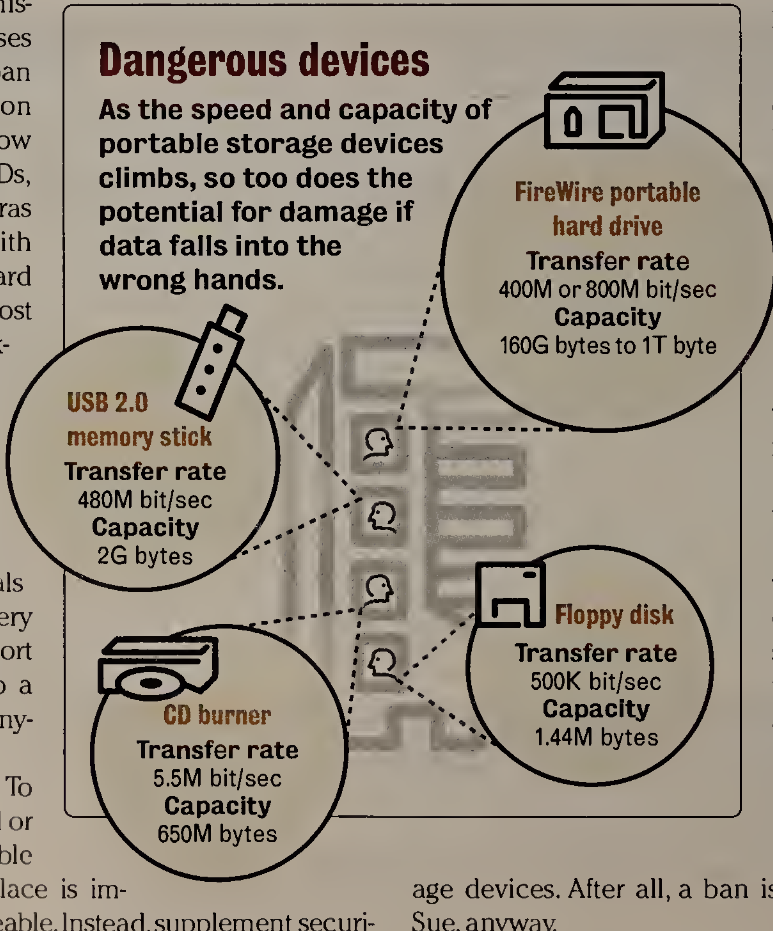
Sue is an industrial spy who has arranged to attend a meeting at the company she is targeting. She slips away from the meeting to check out the marketing department. It's lunchtime, and the place is almost empty. Sue quickly spots a PC that's still logged on to the network. She steps into the cubicle where she is hidden from view, plugs her 512M-byte USB memory stick into the workstation and copies several folders and a client database from the local and network drives. She unplugs and pockets the memory stick and nonchalantly leaves. The whole process takes less than 5 minutes, and nobody knows that she has stolen more than 200M bytes of corporate data.

This all too possible scenario illustrates a growing security concern. The fear is that people will use USB memory sticks, MP3 players and the like to upload malware, steal data from corporate networks, and share stolen software, MP3 or AVI files. In its report, "How to Tackle the Threat from Portable Storage Devices," Gartner suggested that organizations forbid attachment of privately owned portable storage devices to corporate PCs. The report also recommended that desktop PCs be carefully configured to remove or disable drivers needed to use such unauthorized devices.

Certainly these risks aren't new. People were known to steal or mishandle data or introduce viruses with floppy disks and efforts to ban floppies failed. However, in addition to floppies, administrators now have to contend with CDs, DVDs, cell phones and digital cameras with memory, MP3 players with built-in hard drives, portable hard drives and USB memory sticks. Most of these devices attach to a workstation through a USB or FireWire port, are relatively inexpensive and easy to use, and offer high-speed transfer and high-capacity storage.

Dangerous devices

As the speed and capacity of portable storage devices climbs, so too does the potential for damage if data falls into the wrong hands.



What has really changed is the scope of the problem. Individuals now can copy and transport very large volumes of data in a short time. This exposes companies to a greater potential effect than anything experienced with floppies.

What can be done about this? To start, any attempt to simply ban all or even just personally owned portable storage devices from the workplace is impractical and probably unenforceable. Instead, supplement security controls with a strong and clearly worded policy to tell people what devices are allowed and how they can and can't be used.

As a rule, such focused policies work best when supported by broader policies on network security and information handling. In particular, a supporting policy on information classification and usage would be needed to help define what information is or is not transportable, and by whom.

It also would be important to explain and market any portable storage device policy to network users (including visitors) and the administrative staff and management responsible for enforcement.

Ultimately, any portable storage device policy will need to be backed up with compliance or monitoring tools. This likely will require third-party software because standard operating system tools such as Windows 2000 Group Policy do not enable monitoring or blocking of individual ports.

There are other options, such as editing the registry of each PC. However, these labor-intensive solutions are not practical for most shops.

One product that might fit the bill is SmartLine's DeviceLock, which lets network administrators control user access to I/O ports and storage devices on local workstations. With DeviceLock, individual users are assigned privileges depending on who they are, what device is involved, and the date and time. For example, a network administrator could let one consultant use his USB memory stick but block all other consultants from doing so. The consultant also could be blocked from attaching his MP3 player.

In the end, policy and enforcement are more likely to be effective than a ban of portable storage devices. After all, a ban isn't going to block someone like Sue, anyway.

McKinley is a CISSP and president of Summit Communications, a network and security consulting firm. He can be reached at strategist @summit-com.com.

Policy pointers

Here are some suggestions to use as a starting point for developing a portable storage device policy.

1. Identify who the policy applies to, including visitors.

2. Identify the technologies and devices to which the policy applies, such as CD burners, USB memory sticks and PDAs.

3. Identify approved portable storage devices and any associated products, such as data encryption software if applicable.

4. Briefly explain why portable storage device usage is a concern and how the policy is intended to help.

5. Differentiate between personal and business-owned portable storage devices, with rules such as "personal MP3 players may not be attached to company PCs or the company network" and "only company-provided and approved USB memory sticks may be used for data storage and transport."

6. Address the physical security issue with a statement such as "staff must exercise reasonable care to protect against theft of the portable storage device which they have been issued" and "theft of the device must be reported to [insert name]."

7. Include a detailed section on data handling with statements such as "any storage or transportation of data using a company-approved device must comply with the company policy on information handling."

8. Specify when and how portable storage usage is allowed and how it will fit with existing security, such as "the portable storage device may not be used to run or serve software when attached to the corporate network" or "before attaching a portable storage device, the user must be identified and authenticated and a virus scan completed."

9. Use clear, assertive and unambiguous language throughout.

10. Educate all affected and responsible parties on the policy and its history (such as why MP3s don't belong on the network).

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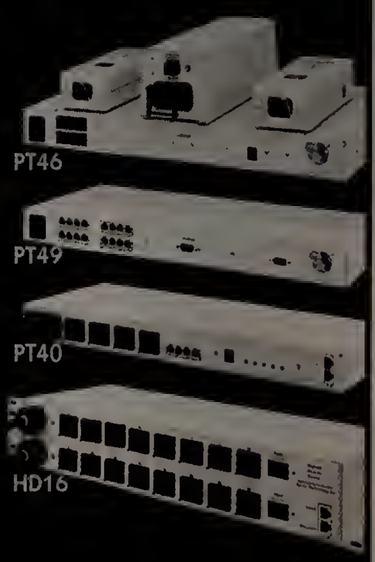

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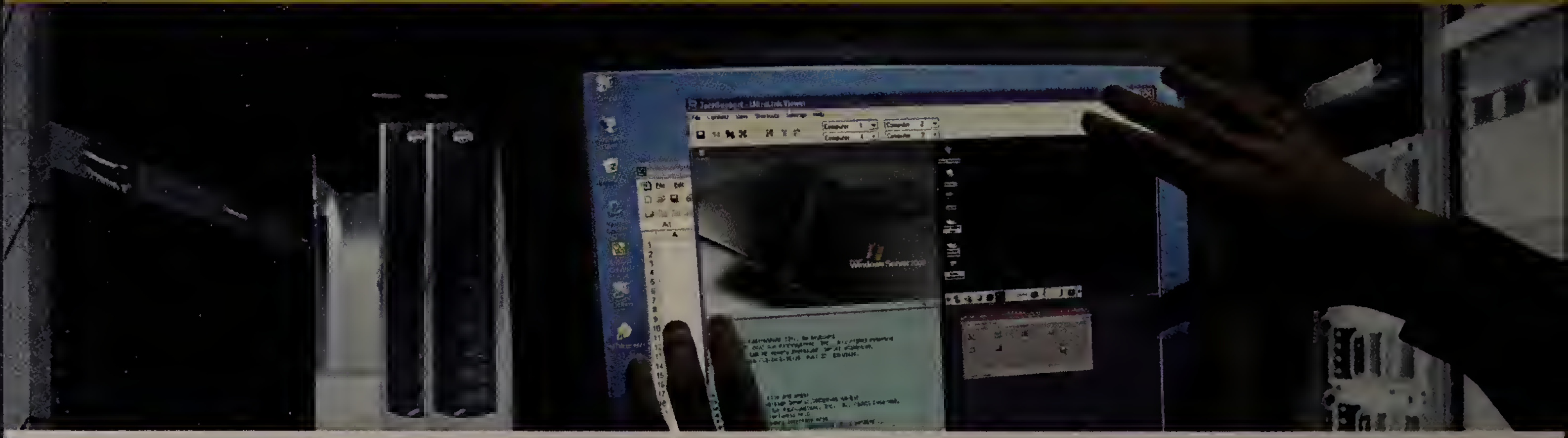

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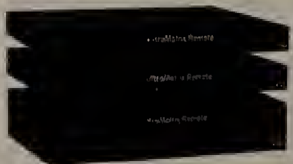

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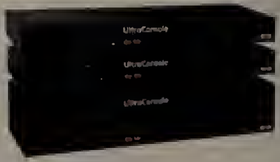

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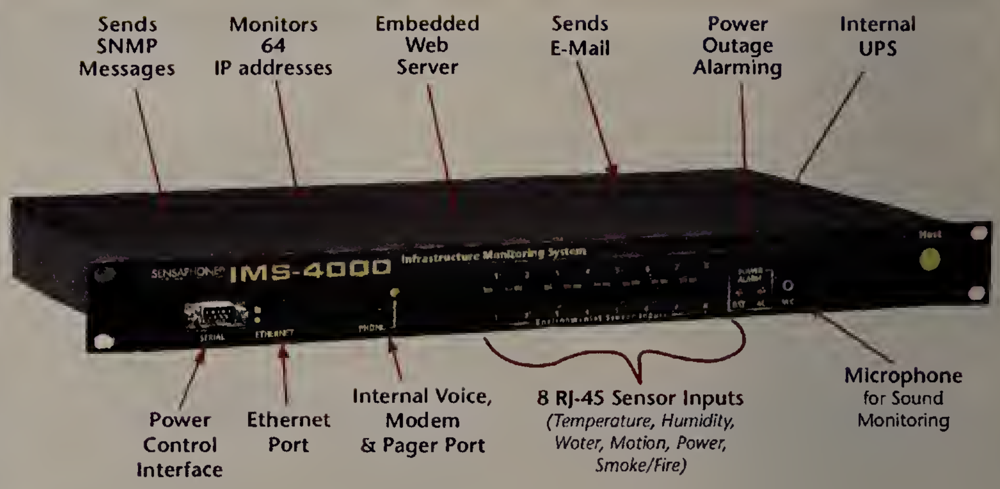
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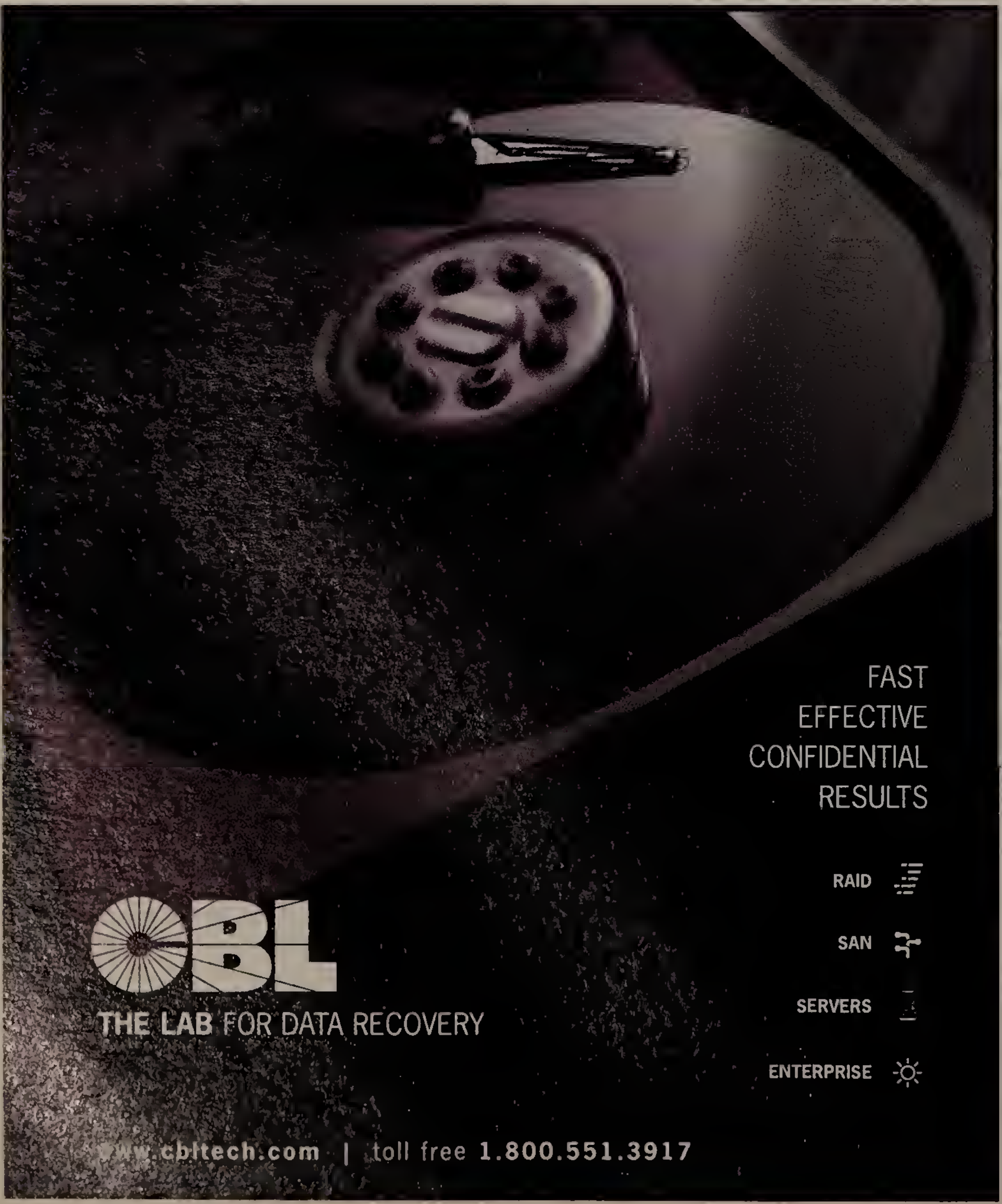
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(Glen Mills, Pennsylvania and other locations throughout the U.S.) Responsible for the design, implementation, configuration, and testing of software systems and system components in the Office of Information Management. Creates design specifications for systems and components. Performs software development, including Lotus Notes Development and ASP and HTML Development, and software engineering including hands-on development of software components, web parts, and web services using .NET framework, C# language, Domino R5, Lotus Script, ASP, DHTML, JavaScript, VBScript, VBA, DHTML, and ASP.NET. Utilizes Visual Basic for software development as well as to maintain software applications. Develops web parts and components for use within Microsoft SharePoint v2 Portal platform. Designs and documents data models. Performs SQL server design and development, including hands-on development of SQL scripts, including ER diagrams and stored procedures. Develops XML schemas and XSL/XSLT transformations. Creates scripts and utilities for data migration and synchronization between multiple platforms such as Lotus Notes/Domino, Microsoft SharePoint, and Microsoft CMS. Designs components and systems within global web-based applications using object-oriented methodology. Participates in architecture and infrastructure definition of global web-based systems. Utilizes Rational Unified Process in software development. Reviews business requirements, develops prototypes, evaluates third party solutions and creates design and architecture documents. Works in a team environment using a structured development process and delivers applications on time and within budget. Follows up with issues in an efficient manner, including working hand in hand with Quality Assurance, Operations, Project Management and/or Business Analysis. Regularly communicates project progress, issues, and risks to project manager.

The wage offered is $80,400 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The position requires a Bachelor's degree or equivalent in Comp Science, Engineering (any), or Information Systems + 2 years of experience in the job offered or 2 years of experience as a Software Engineer, Programmer Analyst, Software Developer, or Senior Software Developer. Employer regards a foreign degree as equivalent to a US Bachelor's degree as determined by an accredited education evaluation service. Related experience must include two years of software development, software engineering, Lotus Notes Development (including Domino R5 and Lotus Script), ASP/HTML Development (including VBScript), Visual Basic, and SQL Server design and development (including Stored Procedures and ER Diagrams).

Please send your resume or C.V., referencing Job Order Number **WEB460002** to the: PA CareerLink, 701 Crosby Street, Suite B, Chester, PA 19013. EOE.

Client/Server Programming Consultant. Design & develop innovative web-based solutions to strengthen relationships between financial institutions & their customers. Apply object-oriented design, analysis & development skills using JAVA J2EE platform. Analyze client's business & technical objectives to determine high level client/server application requirements (e.g., addressing cross functional business processes or workflows, re-engineering business processes, creating object oriented business functional models). Design architectural components of the client/server environment (e.g., data marshaling, insulation layers, class libraries). Perform high level coding activities (e.g., codes device drivers using C/C++; codes architectural components, codes objects). Develop & coordinate the testing process for major application releases & enhancements. Research & recommend products & new technologies for the client/server environment & may act as a formal project leader for development projects. Req. a Bachelor's Degree or for. Equiv. in Eng., Comp. Sci., Math., or related field, plus 5 yrs of progressive exp. in the position offered, interface screen design/develop. or client/server programming develop. Qualified candidate must have at least 1 yr of working exp. in architectural design for web-based client/server environment. Job located in Jacksonville, FL. $94,000/yr. 40 hrs/wk, M-F, 9am - 5pm. Send resumes to: Workforce Program Support, Ref: FL-2562142, P.O. Box 10869, Tallahassee, FL 32302-0869

SW Eng'rs: Dsgn, dev'lp, test web-based bus. sw app'ns w/ ColdFusion 4.5/5/MX, ASP; Java w/ Struts; Dsgn & prog'm CFML pages & custom tags w/ JavaScript, MVC, Fusebox; Analyze & dsgn db module w/ Oracle8i, T-SQL, PL/SQL RDBMS, SQL Svr. 8-5; 40h/w. BS or foreign equival't in Comp Sci, 3 yr wk exp in job or any posit'n w/ ColdFusion, Java/Struts, & T-SQL. Resume to PowerSabre Mahesh@powersabre.com fax: 904 730 5677.

IT Professionals needed for IT development & consulting firm headquartered in the Atlanta region but w/projects for clients located throughout the U.S. Multiple positions open. The positions open are for client server & web-based developers, GMALAN Engineers, Embedded software developers. Some of the skill sets needed immediately include:

- Development of real-time systems using 32-it microprocessors. Required skill sets include: GMLAN network operating system based development, ANSI C, basic H/W analysis & debugging, working w/stakeholders to define & refine requirements. Exp. w/Vector, CANtech automotive network design & simulation tools (CANalyzer & CANoe), & GMLAN handlers.
- Perform ETL (Extract, Transform, & Load); design exception handling strategies & engage in performance tuning of databases; work w/Oracle, DB2, SQL Server, MS Access, & Informatica
- Japanese speaking Test Engineers & Embedded Software Engineers. Should be able to read, write & speak Japanese. Exp. w/ either Honda (GA-NET, iBUS) or equivalent protocols w/ Nissan or V850 (aka/other keywords: NEC V850, V850 Microcontroller, V850 32-Bit, V850-SA1, V850 RISC processor)
- Unix/Linux system administrator, SAN developers.

All positions require a B.S. degree in either computer science, math, engineering, or business. Competitive salary is offered. Exp. required varies from 1-5 yrs. exp. in skills identified above. Send resume to: careers@datamatics.us. Applicants must have authority to work permanently in the U.S.

Sr. Programmer Analyst for health org in Sacramento, CA. Must have Bach's in comp sci/comp eng or rltd field & 2 yrs exp. Send resume to: Sutter Conect, 10470 Old Placerville Rd, Suite 100, Sacramento, CA 95827, attn: Carla Alegado.

GEAC ENTERPRISE SOLUTIONS, INC.

Senior Technical Support Engineer II

Geac® (TSX: GAC) is a global enterprise software company for Business Performance Management, providing customers worldwide with the core financial and operational solutions and service to improve their business performance in real time.

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Requires: Bachlor's degree, or its equivalent experience in Comp. Sci., M.I.S. or Electrical Eng., and experience in client server devlopment and consulting. Also requires expertise in network technology such as TCP/IP, ICMP, SSC and FTP; BEA, Tomcat and Apache application servers; and Java Technologies such as J2EE, RMI, CORBA and Servlets.

To apply for this position please send your resume to geac.jobs@geac.com or visit our website at www.geac.com.

Consulting Engineer wanted to manage & perform consulting projects, as well as write & sell consulting projects, specifically targeted towards the chemical, materials, bio-medical, foods, metals, plastics & semi-conductor industries; write proposals & reports; negotiate contracts & agreements; set up & solve CFD problems in projects; report on technical, schedule & cost performance; make presentations to clients; participate in high tech marketing activities for the chemical & materials industries by preparing sales examples, writing & presenting technical papers, participating in the appropriate professional societies & institutional/industrial consortia & orgs. & building partner relationships; maximize efficiency of consulting project perf. by maximizing team eng. utilization as well as utilization of foreign office; organize review mtgs. to discuss tech. & commercial aspects of & risk analysis of client leads; manage deadlines & client expectations; contribute to marketing activities; devise strategies for working with key repeat clients. Must have PhD in Chem. or Mech. Eng. w/ specialization in CFD, & 2 yrs. CFD exper., incl. use of CFD technology to solve applications problems for the chem. & material industries, & at least 1 yr. exper. using commercial CFD software products & managing the cost & scheduling of consulting projects. (A Master's deg. in Chem. or Mech. Eng. & 5 yrs. stated exper. can substitute for above reqts.) Salary $71,195/yr. Send 2 resumes to Job Order #2004-897, P.O. Box 989, Concord, NH 03302-0989.

Software Engineer (Multiple Positions). Design & implement internet & intranet business app. By using NET, ASP.NET Platform, XML, ActiveX, DCOM, JavaScript and Visual Basic Script. Req: Bachelor in Comp. Sci., Comp. Eng., or Electrical Eng. 40hrs/wk. Job/Interview Site: Torrance, CA. Send resume to BQE Software, Inc. @ 2601 Airport Dr., #380, Torrance, CA 90505.

Senior Software Engineer (Denver, CO) - Using object oriented design principles; Java, VXML mark-up lang.; Web Logic tools; Oracle database tools; Unix & Microsoft Windows NT operating sys.; & Sun Microsystems servers: Consult w/ business customers concerning software & website needs. Analyze/design/develop/code/test databases; websites; interactive voice recognition software, e-business internet transactions software & other software applications to meet customer's needs. Req. Bachelor's in Comp. Sci., related field or equiv. exp. Five yrs. exp. in software dev., including 2 yrs. exp. in website dev.; proficiency in Object oriented database design/website design, detailed working knowledge of interactive voice recognition software dev., Siebel PRM software, Java, VXML, Web Logic tools, Oracle Database tools, Unix operating system, Sun Microsystems servers, & Microsoft Windows NT; & Java certification. 8-5, M-F, $82K/yr. Apply by resume only to Workforce Development Programs, P.O. Box 46547, Denver, CO 80202, refer to job order number CO5093365.

Blackbaud, The leading end-to-end data management and technology solutions provider for the nonprofit community, offering software, services and e-solutions, is seeking a Senior Solutions Engineer based in Charleston, South Carolina to position, quality, investigate and demonstrate Blackbaud's Business Intelligence Software Solutions through an understanding of the technical architecture and of Visual Basic for Applications (VBA), SQL Server, Analysis Services and relational databases including SQL. Requirements are a Master's degree in Computer Information Systems, Engineering or a closely related field plus two years of experience as a Software Sales Engineer, Software Product/Marketing Manager or Software Consultant. Experience must include experience implementing business intelligence software. Must include experience with SQL Server, Analysis Services, Visual Basic for Applications and relational databases including Structural Query Language (SQL). If interested, please submit resume to: Blackbaud Recruiting – AK, 2000 Daniel Island Dr., Charleston, SC 29492.

Comp. Engr.: Parallel Sci. Computing (Beowulf Cluster, C/C++/F77, MPI); parallelize seq./dvlp. new parallel Numer. Methods code for Meso2D/Full Wave Models Simulations (NSF Gravity waves Rsrch); ext. to 3-D ; r/t visualization; Cluster Inst./maint. Requires: M.S. Comp. Sci. & 2 yrs. exp. in job or equiv. educ. Comp Salary. Send resume to: ERAU, Univ. Attorney, 600 S. Clyde Morris Blvd., Daytona Bch., FL 32114.

Software Engineers to analyze, design, develop, test appls using Java, JSP, Servlets, EJB, XML, HTML, JavaScript, C, C++, Oracle etc under UNIX, Windows OS; provide architectural support, create and integrate product data stores into Siebel product module; perform Siebel CRM implementations and install Siebel servers/clients; Develop, enhance components of new/existing appls and databases; interact, train end users. Require: M.S. in CS or Engineering (any branch) with 1 yr exp in Siebel. F/T. Travel involved. Competitive salary. Resume to: HR, ABZ Consulting, Inc., 2600 Century Parkway, Ste 100, Atlanta, GA 30345.

S/W Engrs, Progmr Anlyts, Systems Analysts, for MA based IT firm. Need Bach +1 yr exp for Jr. Level pos's & Mast. +1 yr. Bach + 5 yrs of exp for Sr. Lvl posit's. Var. skills req: Statistical S/W (SAS), PERL,ERWIN, C, C++, VC++, iplanet, ASP, DHTML, JavaScript, Sybase, Oracle, SQLServer, Business Objects, Crystal Rpts., Windows server 2003, lINUX, IIS, UNIX, Sun Solaris, CISCO, PL/SQL, Cognos, Brio, Netscape enterprises server, Coldfusion, data modelling, e-business intelligence, cics, db2, peoplesoft, jdedwards, power builder, CRM, VB, .NET, SAP, j2ee, jsp, Jdbc, ejb, web sphere, web-logic. Apply w/2 copies of resume to H.R.Dept, Corporate Computer Services Inc. 80 Tower, Office Park, Woburn, Ma - 01801.

Experts, Inc is looking for:

Systems Analysts: Master's degree in computer Science/related field with One year experience in the following: Oracle, Microstrategy, Cognos IWR, Informatica, PowerCenter, Power Mart and Java Technologies.

Programmer Analysts: Bachelor's degree in computer science/related field with 5 years progressive exp. in any five of the following skills JAVA, J2EE, XML, Struts, ANT, JBuilder. PeopleSoft, SAP R/3,ABAP, SAP Basis Admin, SAP BIW, ORACLE, PL/SQL, Actuate Reports.

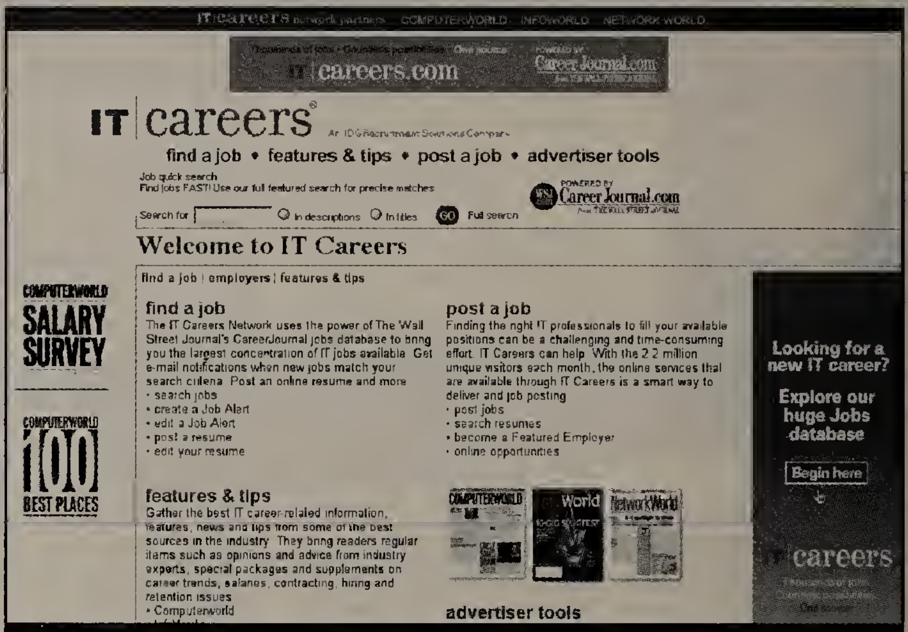
QA Tester: Bachelor's degree in computer science/related field with 5 years progressive exp. in the following: Automation Test tools, Win Runner, Load Runner, Test Director and Rational Tools.

We accept foreign education equivalent of the degree, or the degree equivalent in education and experience.

Send Resume to ExpertsInc 804 N Meadow Brook Dr, Suite #120, Olathe KS 66062.

BCC USA, Inc - South Portland, ME needs experienced Programmer Analyst having a Bachelors degree with minimum two years of progressive work experience in Oracle 9i/8i/8.x/7.x, Oracle 9iAS, Forms 9i/6i/5.0/4.5, SQL*Loader, Reports 9i/6i/3.0/2.5, PL/SQL, SQL, PL/SQL Web Toolkit, Discoverer 9i/4i, Actuate, MQ Series, Shell scripts, Perl, Java, JDBC, and JavaScript. Should be expert in tuning SQL queries using Explain plan, SQL*Trace and TKPROF utility. Should also have some experience in Oracle Database Administration.Competitive salary and benefits. M-F, 40 hours/week. Please mail your resume to BCC USA Inc., HR Department, 650 Main Street Suite 201, South Portland, ME - 04106.

BCC USA Inc - South Portland, ME needs experienced Programmer Analysts having a Bachelors Degree with minimum two years of progressive experience in Analysis, Design, Development, Testing and Implementation of Java / J2EE based applications using JSP, Servlets, Applets, Java Swing, EJB, JDBC, JNDI,JAXB, JMS, WSAD, WebLogic, Websphere, Struts (MVC) Framework, XML, XML-Spy, XSL, Oracle,DB2,MQ Series, UML(Rational Rose), RUP (Rational Unified Process), ClearCase, Ant, Erwin, Load Runner, JUnit, Unix (shell scripting). Must have experience in implementing RUP methodology. Competitive salary and benefits. M-F, 40 hours/week. Please mail your resume to BCC USA Inc., HR Department, 650 Main Street Suite 201, South Portland, ME - 04106.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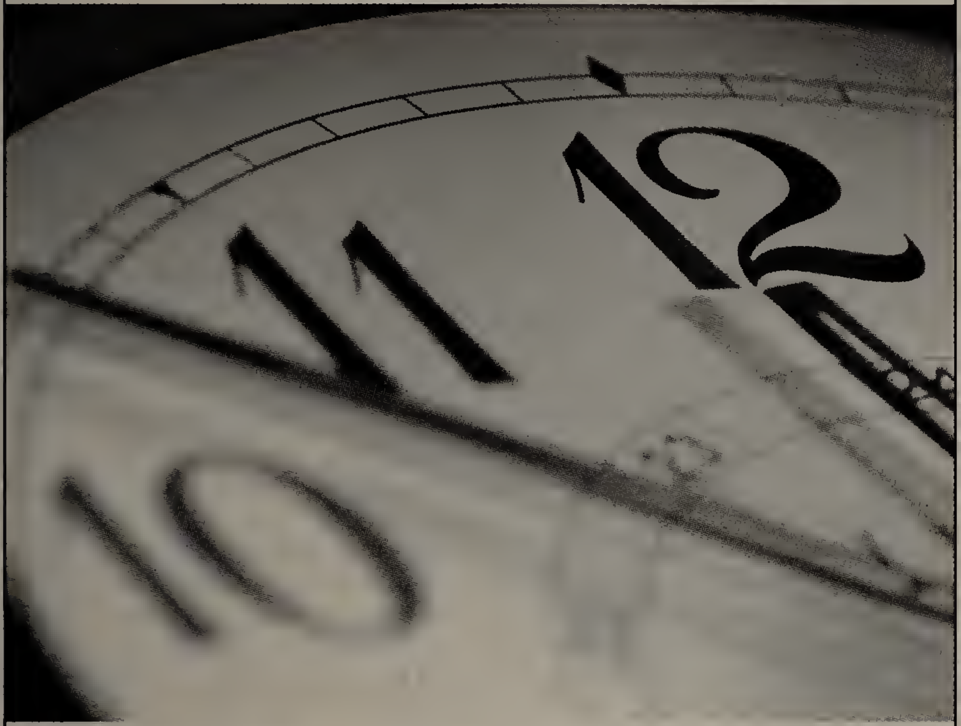

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Product Manager required for leading digital printing products firm to analyze clients' product specifications and marketing requirements. Understand market trends, clients' software functionality needs and forecasting models to oversee development of software prototypes using C+, ORACLE, SQL Server, Excel and other decision modeling tools. Assist in design, position, message, and launch software and software services into the market to create valuable and ongoing client relationships. MBA in Business Administration or Marketing and relevant experience in marketing and IT project management. Send resume to Elena Kotanova, Office Manager, Caslon & Co., 5150 El Camino, Suite B14, Los Altos, CA 94022.

Sr. Programmer Analysts to lead teams to analyze, design, develop appls using OOP, Java, JSP, Servlets, EJB, XML, HTML, JavaScript, Weblogic, JDBC, Oracle, etc in UNIX, Solaris, Windows OSs; develop Oracle stored procedures and data modeling; implement appls and perform strategic planning/operations support; provide end user training. Require BS or foreign equiv. in CS/Engg. (any branch) & 3 yrs exp. in IT. Comp salary, F/T, travel involved. Resume to HR, Ordusion Technologies, Inc., 3883 Rogers Bridge Road, Suite 504, Duluth, GA 30097.

Senior Programmer. Under supervision, perform client application development and support; client requirement collaboration and application design; and duties applicable to application front and back ends. Must have Bachelor's degree in Computer Science, Mathematics or related, 1 yr exp in job offered or Systems Analyst, Programmer or related, including experience with Visual Basic, C, Relational Database implementation, and SQL. Send resume to APAC Customer Services, Inc., Attn: Cindy Corkery, 6 Parkway North, Deerfield, IL 60015. EOE/AA. APAC CUSTOMER SERVICES, INC. is not affiliated with APAC, INC., the road paving and construction materials company.

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Seeking qualified applicants for the following positions in Memphis/Collierville, TN: Senior Business Application Analyst. Act as liaison between technical developers and users/customers. Requirements: Bachelor's degree or equivalent* in computer science, math, statistics, business or related field plus 5 years of experience in analyzing business systems and developing technical automated solutions. Experience with SQL, CGI environment and J2EE environment also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Marc Blackburn, FedEx Corporate Services, 4200 Regent Blvd., Irving, TX 75063. EOE M/F/D/V.

Java Developer. Provide application development services to create new web based applications and maintain existing applications to support business unit requirements using Java technologies. Support the design and development of web based applications through requirement development and documentation, programming, testing and other tasks related to the systems development life cycle. BS in Information Systems or related field. 3+ years exp with enterprise-wide application development, Object Oriented programming and experience with database design and modeling. Strong middleware and front end skills with a thorough understanding of web architecture and design. Submit resume to Ned Bement, Director of Recruiting, Alliance Consulting Associates Inc., 2005 Market Street, 32nd Fl, Philadelphia, PA 19103.

Systems Analysts to work as consultants at client sites in the U.S. and abroad. Imprint, customize & upgrade Oracle ERP s/ware pkgs. Reqs: BA/BS in Comp Sci, Eng'g, Bus, Logistics, HR, or related field + 2 yrs exp w/Oracle Apps or DB's. Send resumes, refs, and salary req's to Attn: HR, IT Convergence, 150 E. Gilman St, Suite B2200, Madison, WI 53703 or resume@itconvergence.com.

Web Software Engineers needed to dvlp OSS s/ware for telecommunications mkt. Req Bach in Com Sci, Comp Eng, MIS or related tech'l field & 3 yrs exp in job or 3 yrs exp in web-based s/ware dvlpmt using MS tools, ASP & VB based COM/COM+, hitting SQL Server databases. Resume to RiverRock Systems, Attn: HR, 14901 Quorum Dr., Ste 250, Dallas, TX 75254.

Technical Architect/Sr. Software Developer wanted. Must have Bach. deg. in Comp. Sci., Math, Physics or related field & 3 yrs. middleware, integration & web technology exper. includ. exper. with IBM WebSphere Application Server & IBM WebSphere MQ & 1 yr. exper. providing tech. support to customers in the energy &/or utilities industries. (Exper. can be concurrent). Send cover letter and resume to Corporate Recruiting, Code EUAF, LogicaCMG, 32 Hartwell Ave., Lexington, MA 02421. No third parties or phone calls please. LogicaCMG is an EEO, M/F/V Employer.

DATABASE ADMINISTRTOR to develop, implement, and maintain the company's database and information systems; design, install, manage and maintain the performance of SQL Server 2000 databases across the unified enterprise, develop and maintain custom inventory, invoice system and sales reports and modify standard reports using VB and PL/SQL; write queries for reports for accounting and finance department; create various databases and maintain database management software using server/client application, including SQL and object oriented programming language. Require: Bachelor's in Computer Science/Information Systems. Competitive salary offered. Mail resume to: President, King Kong USA, Inc., 800 Iowa Ave., Riverside, CA 92507.

Global IT Solutions USI, Inc (GITSUSI, Inc.) has positions open for its branches in Portland, ME and Dakota Dunes, SD. Prog. Analysts to analyze, design/develop s/w appls using Java, JavaScript, VBScript, ASP, HTML, Weblogic, Oracle, SQL, COBOL, DB2, CICS under Windows, Unix & MVS OS; perform unit, functional, integration, regression and systems level testing; analyze user reqs, prepare design documents; develop & enhance online & batch programs; implement, install, test, debug and modify new/existing appls. Require BS or foreign equiv. in CS/Engg. (any branch) & 2 yrs exp. in IT. Travel involved. Competitive Salary. F/T. Please specify desired location when sending resume. Resumes to: HR, GITSUSI, Inc., 1133 East 35th Street, Suite 2D, Brooklyn, NY 11210.

2Wire, Inc. in San Jose seeks Sr. SW Embedded Engr: BS CS in Eng'g or related field + 6 yrs relevant exp. (alt MS CS in Eng'g + 4yrs relevant exp). Send resumes to:

tnguyen@2Wire.com

www.2Wire.com

Sr Programmer Analysts: manage teams to analyze, design, maintain software appls using J2EE, Java, JSP, ASP, HTML, XML, Oracle, SQL Server on Windows/UNIX OS; perform requirements analysis and conduct functional testing/debugging; document, maintain & update use cases, GUI design, BPR scenarios. Require: BS or foreign equiv. in CS/Engg.(any branch) and 2.5 years exp in IT OR MS in CS/Engg (any branch) and 6 months exp in IT. Travel involved. F/T position. Comp. salary. Resume to: HR, Quest America, Inc., 211 East Ontario Street, Suite 1800, Chicago, IL 60611.

Data Warehouse Specialists, Inc. is looking IT professionals. Duties include: design applications for Business intelligence, On-Line Analytical Processing (OLAP) & Datawarehousing using various tools. Competitive wage with full benefits. Please send resumes to info@dwspecialsts.com. EOE.

DocOptions, Inc. seeks high skilled Software Engineers to design & develop applications using Object Oriented Analysis/Design tech, TCP/IP, XML, XSL. Applicants must have MS in computer science with 1-2 IT experience. Please send resumes to 1851 Camellia Dr., Tracy, CA 95378.

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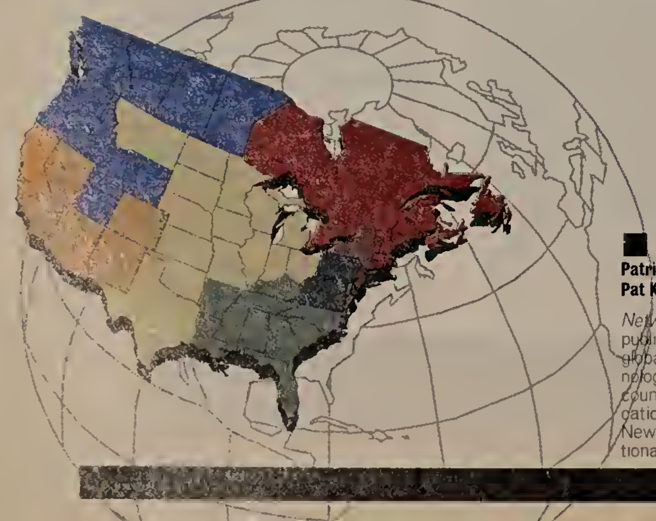

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Names

continued from page 1

Hosted call-center company White Pajama hasn't had it any easier.

"It was difficult to get through accounts payable with a name like that," acknowledges Aaron Burcell, director of marketing for the colorfully named company. One potential customer said," 'OK, we'll do this deal if you promise to change your name by the end of the year.' They were only half-kidding."

White Pajama plans to strip off its name by the end of this month.

Even given such good reasons, going through with a company name change is a huge decision considering the time and money put into establishing the original brand and that needs to be channeled into promoting the new one. Then there are the more mundane aspects of making the swap — redesigning business cards and signage, and making over Web sites.

Not that all this has stopped many a network company from coming up with a new handle.

MCI, for example, couldn't wait to ditch the name WorldCom last year as part of its post-scandal comeback effort ("We wanted a new name that would make us proud," Chairman Michael Capellas said at the time.) More recently, Network Associates readopted the name McAfee in an effort to focus squarely on the security market where McAfee's name is well known.

In GoRemote's case, the company is evolving from being a supplier of services mainly to ISPs to an enterprise network service provider. The company wanted to move to a clearer name, especially because the moniker GRIC was not all that familiar to its new target audience anyway, Fuggetta says. GRIC originally stood for Global Reach Internet Consortium, reflecting its initial focus.

GRIC, which officially changed its name in May, started the process back in 2002. The company, which actually was called AimNet back in the early 1990s, hired a branding firm and tested a set of names, but decided not to pull the trigger.

Fuggetta signed on as a consultant to the CEO in January 2003 and made the name change one of his recommendations as part of a broader marketing revamp at the company. GRIC hired Fuggetta as its senior vice president of worldwide marketing that summer, and the name-change project went into high gear in January.

At one point Fuggetta, who left the company earlier this year and now is back to serving as a consultant to GoRemote, got stuck on the notion of working the word "beyond" into the name. But that idea got dashed one day when his wife pointed out that she just received a sample of a new tampon in the mail that bore the name Beyond.

One thing Fuggetta knew was he wanted a name that clearly described what GoRemote did, not a made-up word like Avaya or Genuity (he was involved in the GTE Internetworking-to-Genuity transition in a past job). While GoRemote is a decent-sized company, at $50 million in annual revenue, he says the outfit isn't so well-heeled that it can fund a branding campaign of the sort needed to make such a name stick in the minds of potential customers. Such names, he says, are the purview of companies like AT&T.

Deborah Wagner, who as the owner of StoryHat in Glen Ellen, Calif., helps companies change names and establish brands, calls company names that say what they mean "full vessels." Those that don't say much of anything about the company — Yahoo, for example — are called "empty vessels" and need a story built around them. Such names tend to be easier to trademark, she says.

InnoPath, the new name for mobile software maker DoOnGo that StoryHat conceived, is somewhere in between full and empty. "It's mid-vessel," she says.

GoRemote considered using an outside firm to pick its name, but wound up going solo. Fuggetta vividly recalls coming up with the name GoRemote shortly after retiring to his home office on a Saturday night after dinner and wine with his wife. He ran back into the family room jumping up and down, then proceeded to track down members of the management team by phone, even pulling one executive out of a theater seat.

"Sometimes when it comes to naming and branding, the most obvious and simplest is the best," he says.

Importantly, the name also passed the URL test: No one had taken it yet. That, Fuggetta says, is among the toughest challenges.

"It's nearly impossible to come up with something that hasn't been taken," he says. "It's frustrating."

Fuggetta declines to pinpoint how much the company spent on its renaming effort but says the company saved itself a bundle by not hiring a branding consultant to do it. That could have cost $10 million or more, he says. He pegs the cost of implementing the new name, such as in new brochures and on the Web site, at less than 1% of the company's marketing budget for 2004.

Quantifying what impact the name change has on the company's top and bottom lines also will be difficult, Fuggetta says. The company in August posted its first quarterly results since the name change and reported a 27% jump in revenue from the year-ago second quarter but also said it lost $3.8 million, about a 10-fold increase over its loss in the second quarter a year ago.

StoryHat's Wagner, who gets most of her business from venture capitalists working with start-ups, says that while a name can help a company make a splash or improve its prospects, it's not all about the name. "It's the way a company is managed, the way it markets itself. And it depends on the market climate," she says.

Wagner adds that customers increasingly are seeking help naming not just companies, but products. The key here is coming up with an "extensible" name, one that can evolve along with the product line. "That's not easy to do with numeric names [such as via version numbers], so there is a move away from version numbers to give products more personality," she says.

In either case, the important thing is coming up with a name that works long term.

"It's like getting a tattoo," Wagner says. "The process can be painful, so you better be able to live with it." ■

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Name game

Can you match the old network company names on the left with the current names on the right?

Old names	Current names
1. Cabletron	A. Aprisma/Enterasys/ Riverstone Networks
2. CacheFlow	
3. Caldera	B. Blue Coat Systems
4. Loudcloud	C. Openwave
5. Malachite Technologies	D. Opsware
6. Software.com/Phone.com	E. Sandial Systems

1/A, 2/B, 3/F, 4/D, 5/E, 6/C

ID management

continued from page 14

that the platform vendors fall short," says John Aisien, vice president of marketing and business development for Thor, a provisioning vendor. "People are buying best of breed. They are buying the tools that they need."

Nevertheless, CA's Netegrity buyout is part of a plan to offer a full complement of identity management products.

"CA began increasing its focus on identity management a couple of years ago when it acquired a directory service, and they redoubled the efforts over the last year or so," Lewis says. "They needed to acquire not just technology but market share. With Netegrity they get both."

But CA will need to prove itself to Netegrity customers.

"Our initial concerns are only about price. CA has a reputation for raising costs on software," says Steve Linstead, program manager for Johnson Controls, a Milwaukee supplier of automotive parts and building controls. Linstead uses Netegrity SiteMinder for access and password management, and is evaluating Netegrity's IdentityMiner eProvision. "We don't know enough yet about CA's plans to make any product decisions," he says.

Industry watchers advise CA to take a page from Sun's playbook when it acquired WaveSet. Sun turned the decision-making over to the WaveSet team.

"CA should not buy it and gut it," says Earl Perkins, a senior program director at Meta Group. "CA should consider merging with Netegrity rather than completely taking it over. The decision-making reins should stay with the Netegrity team."

CA says it won't put forth a combined product road map until the deal closes, but the pressure will be on to do so as soon as possible. IBM already has integrated and delivered products on two 2002 acquisitions, and BMC Software is set to announce improvements to its Control-SA identity management product suite by December.

Sun is attempting to exploit any uncertainty from CA.

"We think CA and Netegrity will be inwardly focused, trying to figure out their overlapping product lines and personnel, and won't be looking forward, so we are offering a migration path," says Sara Gates, vice president of identity management for Sun.

Senior Editor Ann Bednarz contributed to this story.

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BackSpin Mark Gibbs

Banning the licking of toads

In Los Angeles there is apparently still a law on the books that makes licking toads illegal, while in the city of Walnut, Calif., there is a law that reads "No man or boy shall dress as a girl or woman without a permit from the sheriff, except for the purpose of amusement, show or drama."

These laws probably came about much in the way that a bill sponsored by Texas Rep. Tom Moore of Waco in 1971 got passed. His bill commended Albert DeSalvo of Massachusetts "for his noted activities and unconventional techniques involving population control and applied psychology."

The point Moore was trying to make was that his fellow lawmakers often didn't read or understand the bills and resolutions they signed. He made his point quite nicely because DeSalvo was more commonly known as The Boston Strangler, a serial killer responsible for the murders of 13 women between 1962 and 1964.

Last week I saw an interesting piece of legislation get passed by the House that I suspect was equally misunderstood by the lawmakers: This bill was the so-called Spy Act, which defines civil penalties of up to $3 million for spyware distributors.

The Spy Act was sponsored by Rep. Mary Bono (R-Calif.), who, according to an story in the Massachusetts Institute of Technology's *Technology Review*, sponsored the Spy Act after "she discovered spyware on her own computer."

Allow me a small digression here, but doesn't that seem a little strange? Given the myriad problems we face in our society that really need addressing, such as healthcare, pollution and crime, doesn't launching a legal jihad on spyware sort of imply that Bono has a surprising amount of time on her hands?

Anyway, the problem with the Spy Act is that it is going to be about as successful in reducing spyware as the CAN-SPAM Act has been in reducing spam, which is to say, hardly at all.

Behind this problem are three factors that would make it extremely difficult, if not impossible, for spyware legislation to do its intended job:

The first is that, despite the fancy wording in the act it doesn't cover all of the possibilities of how spyware can act and what it might do. This means that interpretations of the law's applicability will make it hard to get cases to court and even harder to get convictions.

The second reason is spyware is hard to identify even if you have a good definition of what it does. To some, a particular piece of spyware might be useful, while to others it might cripple their systems. Spyware is rather like pornography: terribly hard to define but each of us knows it when we see it.

The third problem is that, according to the act, the responsibility for enforcement of the civil violations lies with the Federal Trade Commission (FTC). According to the *Technoloyg Review* story, the FTC "has stated that existing laws adequately address the deceptive business practices underlying spyware."

If that is the case, then why haven't we seen the FTC prosecute the likes of WhenU and Claria (nee Gator)? Because the FTC doesn't have the resources to adequately deal with the really important stuff, let alone something as relatively obscure and complex as spyware.

Let's not forget that such a bill will not go unchallenged by the spyware vendors. In April WhenU managed to get a temporary injunction delaying enforcement of Utah's anti-spyware law. You should consider that a taste of things to come.

The fact is that laws for controlling inappropriate and unethical uses of technology are always framed after the problem has mutated into wildly different forms and the issues are rarely understood by the lawmakers who sign them off anyway. Want to cure the spyware problem? The answers lie in technology rather than in laws that are as sensible as banning toad licking.

Legal opinions to backspin@gibbs.com.

Layer 8

By Melissa Shaw

Americans = security idiots

The National Cyber Security Alliance is talking to us in a language we can understand. The NCSA polled American computer users and found that 90% of us could remember when Janet Jackson flashed the country, but only 60% could remember when they last updated their anti-virus, firewall or operating system on their PC. That's about 59% more than we expected.

Even better, the survey showed that "30% of people believed they had more chance of getting struck by lightning, being audited by the tax man or winning the lottery than falling victim to a computer security problem," the BBC said. That group represented AOL users, right? Right?

DocFinder: 4143

The answer: blogs

The question: What new category did "Jeopardy" use in a recent show?

Another answer: Jumping the shark.

Another question: What are blogs officially now in danger of doing?

Check out the DocFinder number below to see the screen caps, questions and answers from the inaugural blog category. It also features an MP3 of the questions and answers if you're longing for the dulcet tones of Alex Trebek.

DocFinder: 4144

U.S. cybersecurity chief resigns

Amit Yoran, a former Symantec exec, is also now the former U.S. cybersecurity czar. He resigned earlier this month.

According to CNN, Yoran "has privately described frustrations in recent months to colleagues in the technology industry."

No official word on what those frustrations were, but your crackerjack Layer 8 Washington bureau has uncovered the truth: Yoran was PO'ed because his staff kept writing their passwords on Post-It notes and sticking them on their monitors.

DocFinder: 4145

Ballmer: iPod users steal music

Do you own an iPod? You do? Steve Ballmer says you're a thief.

"The most common format of music on an iPod is 'stolen,'" he told reporters in London last week, according to *The Register*. Right, because iPod is the only digital music player out there.

Ballmer apparently blames the lack of longstanding digital rights management (DRM) on the Mac OS for the proliferation of "stolen" music zipping hither and yon.

The Microsoft capo is promising his company will produce DRM code that's "easier, easier, easier, easier to use."

Wow, that's some crazy easy code.

DocFinder: 4146

iMac G5 stymies users

Dear Friends at Apple,

Your new iMac G5 is super cool and sleek. Yet we're concerned you built a computer that's too smart for the masses. Should you really produce a computer for which you had to write directions on how to pick it up? To wit:

"Don't know how to pick up and carry your iMac G5? It's easy.

"Before moving your computer, make sure all cables and cords are disconnected.

"Pick up the iMac G5 by grasping both sides of the computer. Carry it to wherever you wish."

Your pals at Layer 8

DocFinder: 4147

Where's Buzz? Paul McNamara donned his news reporter's hat to cover Vortex 2004 last week. That story's on Page 1.

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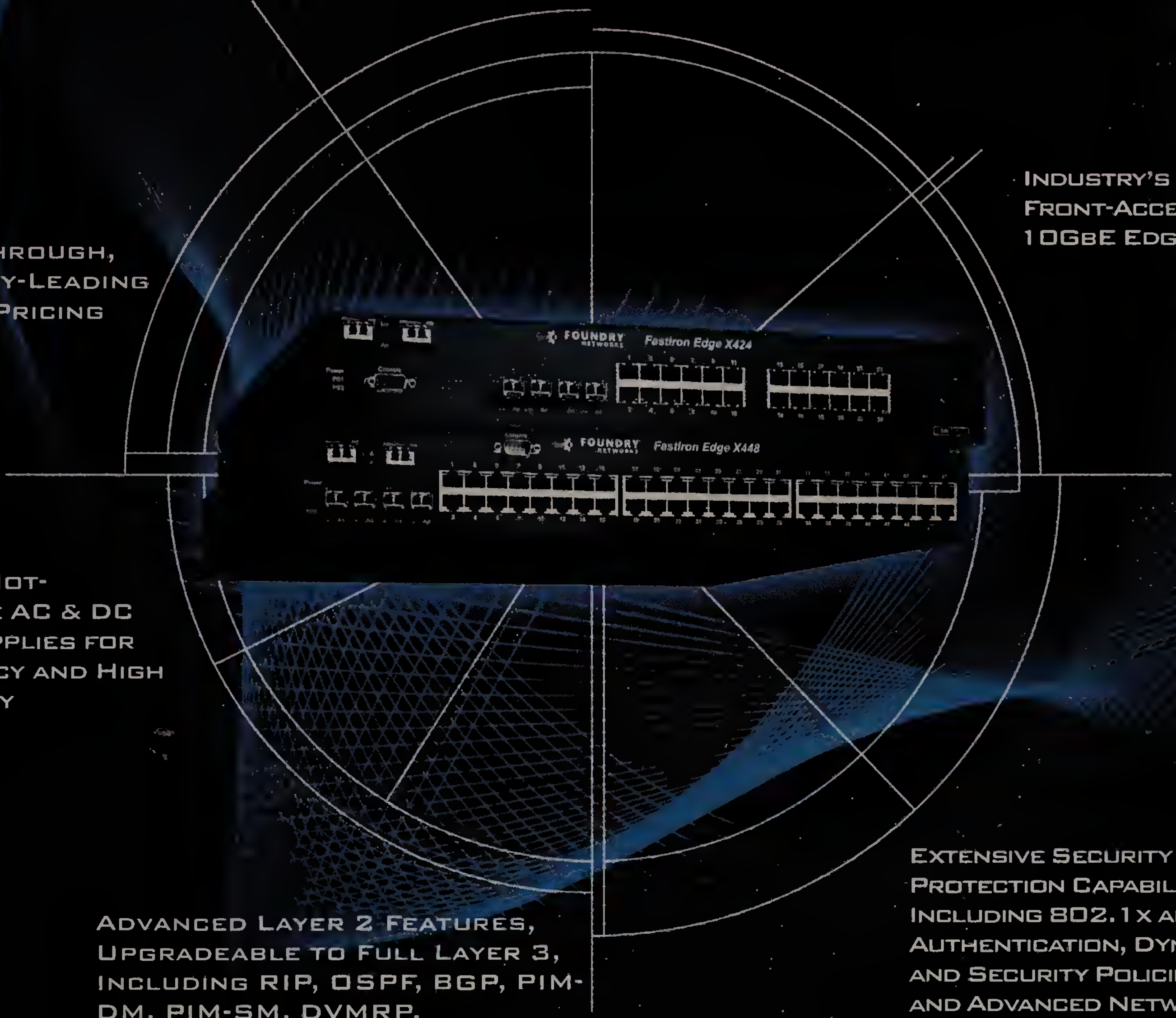

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